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RESUMO

A estimativa médico-legal da idade cronológica tem vindo a ter um papel cada vez mais importante, não só na identificação de cadáveres e/ou restos cadavéricos, mas a sua importância e utilização em indivíduos vivos tem expandido nos últimos anos, particularmente pelo aumento do fenómeno da imigração (Schmeling *et al.*, 2007; Oliveira and Gomes, 2017; Ribeiro, Estrela and Machado, 2017).

A sua necessidade enquadra-se, quando se refere a indivíduos vivos, a situações relacionadas com dilemas judiciais associados a menoridade, paternidade, responsabilidade criminal em indivíduos sem documentos de identificação ou com documentação falsa, pedidos de asilo político, refugiados e imigrantes ilegais, adoção sem certidão de nascimento e em indivíduos com problemas psicológicos (Schmeling *et al.*, 2007, 2016; Oliveira and Gomes, 2017; Sykes, Bhayat and Bernitz, 2017).

A estimativa biológica de idade é aplicada quando a data de nascimento é desconhecida. Esta não é uma avaliação precisa, pois recorre às características biológicas individuais relacionadas com o grau de desenvolvimento que varia com fatores genéticos, metabólicos, nutricionais e ambientais (Garn, Lewis and Kerewsky, 1965; Elamin and Liversidge, 2013).

Em situações em que a idade cronológica é desconhecida ou dissimulada, é necessário entender que um individuo pode aparentar uma idade que não corresponde à real. Isto é, pode ter uma idade biológica maior que a cronológica por ter sofrido de várias doenças durante a vida; ou ter uma idade biológica menor à idade cronológica, por apresentar um atraso no desenvolvimento. Para estimar a idade cronológica através da idade biológica é necessário recorrer a métodos científicos para aferir os parâmetros biológicos através do desenvolvimento ósseo, sexual e dentário (Hala *et al.*, 2016; Pinchi *et al.*, 2018).

Existem vários métodos de estimativa da idade dentária que podem ser classificados de invasivos, quando requerem a extração dos dentes; subdividindo em morfológicos, bioquímicos e histológicos, que não são aplicados em indivíduos vivos; e de não-invasivos, nos quais os métodos são baseados no desenvolvimento dentário com recurso a tabelas ou diagramas aplicados a exames radiográficos – metodologia indireta (Maber, Liversidge and Hector, 2006; Cameriere *et al.*, 2008; AlQahtani, Hector and Liversidge, 2014). Os métodos não invasivos são os que detêm maior relevância. Ambos os métodos diferem consoante a faixa etária a que se destinam: aqueles que são aplicados em crianças e adolescentes, baseados na erupção e mineralização dos dentes e, nos quais,

o desenvolvimento dentário não está finalizado; e aqueles que são aplicados em adultos, baseados no binómio alterações dentárias/idade, uma vez que o desenvolvimento dentário se encontra concluído (Massler, Schour and Poncher, 1941).

Contudo, importa referir que nenhum método é 100% exato na estimativa da idade dentária, sendo que as principais razões para tal são os erros sistemáticos inerentes a cada método, a variabilidade intra e inter-observador (Popović and Thomas, 2017) e, com os fatores relacionados com a população em estudo; como a etnia, o nível socioeconómico e as alterações patológicas, levando a situações de sobrestima ou subestima, consoante o método utilizado (Schmeling *et al.*, 2007, 2008; Cesário *et al.*, 2016; Pinchi *et al.*, 2018).

O recurso a radiografias dentárias tem sido utilizado para a estimativa da idade dentária, demonstrando ser uma fonte importante de informação para a Medicina Dentária Forense. Diversos métodos, desenvolvidos por diferentes autores, têm utilizado radiografias periapicais e/ou ortopantomografias como base para os procedimentos de determinação da idade dentária (Cameriere *et al.*, 2008).

A dificuldade aumenta quando se trata de indivíduos com necessidades especiais, devido a síndromes ou outras condições fisiopatológicas que podem modificar o desenvolvimento dentário normal (Diz, Limeres, A.F. Salgado, *et al.*, 2011). Em tais crianças com patologias sistémicas, alguns dos dentes podem aparecer distorcidos na ortopantomografia devido à falta de cooperação durante a execução da mesma. Os distúrbios cromossómicos e síndromes, que surgem de defeitos numéricos e estruturais dos cromossomas, frequentemente incluem manifestações que afetam a região craniofacial, sendo que, muitos desses, apresentam manifestações orais características, como, por exemplo, agenesias múltiplas e erupção tardia da dentição decídua e dentição permanente (Suri, Tompson and Atenafu, 2011; Patil, Rao and Majumdar, 2014).

Existem vários métodos de aplicação a radiografias, entre os quais o Atlas de Londres ou de AlQahtani, (AlQahtani, 2012) o qual já foi aplicado a várias populações, entre as quais una população portuguesa que não apresentou quaisquer diferenças estatisticamente significativas com a população original do método (Pavlović, Pereira and Santos, 2017).

O objetivo principal desta investigação foi realizar a estimativa da idade cronológica de uma população com consulta de necessidades especiais (com deficiências físicas e mentais) da Faculdade de Medicina Dentária da Universidade de Lisboa (FMDUL) e no Hospital Santa Maria (HSM), no âmbito da identificação médico-legal através da aplicação do Atlas de AlQahtani. Este estudo baseou-se na análise de

ortopantomografias, exames complementares de diagnóstico utilizados em vários estudos, por forma a realizar a estimativa de idade, demonstrando ser uma importante fonte de informação para a medicina dentária forense. Existem vários métodos, desenvolvidos por diferentes autores, que utilizaram radiografias periapicais e/ou ortopantomografias como base para procedimentos de determinação da idade dentária, que são menos dispendiosos e mais rápidos em comparação com outros métodos e são, portanto, os escolhidos na prática pericial (Kvaal *et al.*, 1995; Schmeling *et al.*, 2007; Macha *et al.*, 2017).

A amostra foi selecionada da população referida através de um processo de amostragem sistemática que compreende 163 ortopantomografias, de 133 pacientes de ambos os sexos com idade compreendida entre 4 e 23 anos. Todos os dados foram registados em quatro folhas do Microsoft Excel® e a análise estatística dos dados foi realizada utilizando o software estatístico de análise de dados IBM® SPSS® Statistics 25 (Statistical Package for the Social Sciences).

A partir dos resultados obtidos neste estudo podemos concluir que que não houve diferenças estatisticamente significativas entre as estimativas obtidas através do lado esquerdo e do lado direito ($p > 0,05$), mas há claramente diferenças quando comparamos a idade cronológica com a idade estimada, revelando que as estimativas são enviesadas na população em estudo, ou seja, que há um erro sistemático.

Em relação à instituição e ao género, os nossos resultados mostram que não há diferenças significativas, portanto, o mesmo atlas pode ser usado para ambas as circunstâncias. Verificou-se que houve uma prevalência geral de subestimação em todos os grupos, exceto para as faixas etárias abaixo de 6 e de 7 a 12 anos.

A autora deparou que tinha dificuldades na estimativa da idade no grupo de indíviduos com pelo menos 16 anos (M16), pelo que sugere que o atlas tenha melhor qualidade de imagens dos ápices nos diagramas que descrevam as formas morfológicas e mudanças nos dentes, mais especificamente, para idades próximas a 16 anos. Logo é mais fácil classificar e estimar a idade em menores de 16 anos do que em maiores de 16 anos (Pinchi *et al.*, 2018). O erro médio de subestimação no grupo de indíviduos com menos de 16 anos (m16) foi muito menor (0,75 meses à direita e 0,37 meses à esquerda) do que no grupo M16 (26,10 meses à direita e 26,79 meses à esquerda).

Embora o erro em M16 tenha sido muito maior devido à dificuldade em avaliar corretamente a idade dentária em dentes molares, quando presente, apesar de para este estudo a presença de todos os terceiros molares não fosse um critério de inclusão, deve

ser considerado como tal, para melhor avaliação da idade em maiores de 16 anos (Branco, Pestana and Pereira, 2012; Pavlović, Pereira and Santos, 2017). Isso poderia explicar o motivo das discrepâncias entre os grupos etários, além da baixa qualidade do OPG.

Os resultados obtidos mostram que o Atlas de AlQahtani pode ser usado como um método na estimativa médico-legal de idade para fins periciais numa população com necessidades especiais, mas com precaução em relação ao limite de 16 anos.

Uma última análise foi realizada para aferir se existem diferenças estatisticamente significantes nos pacientes com alterações sistémicas e outras patologias com repercussões dentárias. Os resultados mostraram uma discrepância na estimação de direita *versus* real e esquerda *versus* real, o que nos impede de concluir completamente se a hipótese nula pode ou não ser rejeitada. No geral, ainda podemos estabelecer uma tendência de subestimação sem diferenças estatisticamente significativas entre as estimativas direita *versus* esquerda. Verificamos que no grupo de patologias com repercussões dentárias têm um erro maior na subestimação, portanto, o ponto médio deve ser aumentado em cerca de 15 meses em pacientes com síndrome de Down, alterações cromossómicas, síndromes e distúrbios do sistema nervoso. Enquanto que no grupo sem repercussões dentárias, a subestimação média foi de cerca de 7 meses.

O Atlas de AlQahtani pode potencialmente ser usado como uma ferramenta para a estimativa médico-legal da idade no grupo de indivíduos com patologias sistémicas com repercussão no desenvolvimento dentário, mas sugerimos estudos adicionais com amostras maiores para criar um atlas adequado para esta população, com particular enfoque na idade aproximada de 16 anos.

Palavras-chave: Estimativa Médico-Legal da Idade; Atlas de AlQahtani; Ortopantomografia; Patologia Sistémica; Medicina Dentária Forense.

ABSTRACT

The medico-legal estimation of chronological age has played an increasingly important role, not only in the identification of humans and/or human remains, but also in the living individuals it has expanded in recent years due to the phenomenon of immigration.

The aim of this investigation was to validate the Atlas of AlQahtani in a population with special needs, to estimate chronological age in a medical-legal context. A sample of 163 orthopantomograms from two institutions was collected from 133 patients aged between 4 and 23 years.

Our results show no statistically significant difference between left and right side ($p>0.05$), but if we compare chronological *versus* estimated there clearly is a difference, the estimates are biased, i.e., a systematic error was made. Regarding institution and gender our results show that there are no differences, therefore the same atlas can be used for both circumstances. There is a general prevalence for underestimation, except for the age groups of under 6 and 7 to 12 years.

The average underestimation error in the group under 16 years is much lower (0.75 months right and 0.37 months left) than in the group of at least 16 years old (26.10 months right and 26.79 months left). For those with or without dental repercussions, we can verify that those with dental repercussions have a higher error in underestimation, therefore the midpoint should be increased to about 15 months in patients with Down´s syndrome, chromosomic alterations, syndromes, and central nervous system disorders. For those without dental repercussions, the midpoint for the author was 7 months.

This atlas can be potentially used as a tool for age estimation, but we suggest further studies with larger samples to create adequate atlases for all the required scenarios, in particular, diagrams for patients with special needs with an approximate age of 16 years.

Keywords: Medico-legal Age Estimation; AlQahtani Atlas; Orthopantomography; Systemic Diseases; Forensic Dentistry.

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1. INTRODUCTION

In Forensic Sciences, the estimation of chronological age has played an increasingly important role in medical-legal cases, not only in the identification of humans and/or human remains, but it´s importance and use in the living individuals has expanded in recent years, particularly due to the increasing phenomenon of immigration (Schmeling *et al.*, 2007; Oliveira and Gomes, 2017; Ribeiro, Estrela and Machado, 2017; Sykes, Bhayat and Bernitz, 2017).

Knowledge of an individual's chronological age is a basic right, and having it documented is what gives us our individual identity. The date of birth is fundamental to carry out various daily activities such as enrolling in school, starting a career path, marriage, retirement; which are of great legal importance. Chronological and biological age are distinct concepts, the first one relates to the time elapsed since birth, measured in units of time, extending to any point in time being used in research and development monitoring as a legal measure of grouping individuals. The second refers to bone, dental and sexual age; being estimated from the analysis of the maturation of one or more tissues or organs, such as bones or teeth, where maturation is graded by the occurrence of an event or a sequence of events that are irreversible; and which are compared to normal standards (Willems, 2016; Pinchi *et al.*, 2018).

Age estimation is applied when the date of birth is unknown, and this is not an accurate assessment, it recounts to the individual characteristics related to the degree of development that varies with genetic, metabolic, nutritional and environmental factors (Garn, Lewis and Kerewsky, 1965; Elamin and Liversidge, 2013). It is a fundamental and a challenging subject, constantly evolving. It is of great interest in the clinical scope, both medical and medical-dental, at the level of diagnosis, prognosis and evaluation of treatments, as well as in forensic human identification. But it is in the medical-legal aspect that it becomes categorical and determinant (Schmeling *et al.*, 2007, 2016).

Age estimation can support the confirmation of the identity of a human or human remains, however it depends on the quantity and quality of these mortal remains, the environmental conditions in which they are found and the time elapsed, based on the anthropological and dental characteristics (Pereira, Caldas and Pestana, 2013; Macha *et al.*, 2017). Subsequently in living individuals the estimate has to be as accurate as possible since it is assumed that such information is needed in a legal environment (Branco, Pestana and Pereira, 2012), and its applicability in criminal law (validation of documents, imputability and political asylum) and civil law (social benefits, employment and

marriage) (Diário da República, 2008; Sykes, Bhayat and Bernitz, 2017). As Ambroise Paré said "*It is the application of medical knowledge to judicial problems*" (Boyd Howard Hill, 1960).

In recent years, the application of the medico-legal age estimate has been of great importance to the level of expertise in living individuals, and it is necessary to find precise techniques for this purpose (Pereira, Escobar and Santos, 2015). Its necessity is related, when referring to living individuals, to situations involving judicial and civil dilemmas associated with minority, paternity, criminal responsibility for individuals without identification documents or with false documentation, political asylum applications, refugees and illegal immigrants, adoption without birth certificate, alleged incapacity and claim of old age pensions (Schmeling *et al.*, 2016; Oliveira and Gomes, 2017). The estimation of age by dental methods was included as part of the process of asylum seeking in Portugal and the legal framework of forensic examination is based on biomedical ethics (Diário da República, 2004). In 2016, 40 people were registered as victims of human trafficking. Of this total, eight victims were minors. There is also evidence of 24 requests for asylum by unaccompanied minors, 21 originating from Africa (mostly aged between 16 and 17 years) (Oliveira and Gomes, 2017; Ribeiro, Estrela and Machado, 2017). Unaccompanied minors are a very vulnerable group in need of protection and therefore special measures are taken by the government of the first EU country where they enter and apply for asylum, where a legal guardian is appointed, who is legally responsible for the care and well-being of these minors. According to EU directives, all individuals claiming an age minority have the fundamental rights of child protection, health care and education established in the UN conventions on Rights of the Child (United Nations High Commissioner for Refugees, 1954; European Commission, 1989; Maber, Liversidge and Hector, 2006; Pereira, Escobar and Santos, 2015).

Dental development has several structural changes throughout life that make them good age indicators, and their mineralization and eruption are less affected by endocrine, environmental and nutritional changes, compared to bone markers; thus, being extremely significant and primordial in estimating age (Garn, Lewis and Polacheck, 1959; Garn, Lewis and Kerewsky, 1965; Schmeling *et al.*, 2007; Elamin and Liversidge, 2013).

Dental radiographs have been used for dental age estimation, proving to be an important source of information for Forensic Dentistry. Several methods, developed by different authors, have used periapical radiographs and/or OPGs as a basis for dental age determination procedures, which are less expensive and faster compared to other methods

and are therefore the ones chosen (Kvaal *et al.*, 1995; Schmeling *et al.*, 2007; Macha *et al.*, 2017).

However, it should be noted that no method is 100% accurate in estimating dental age and the main reasons for this are the systematic errors inherent to each method, intra- and interobserver variability (Popović and Thomas, 2017) and with factors related to the study population such as ethnicity, socioeconomic level and pathological alterations, leading to situations of overestimation or underestimation, depending on the method used (Schmeling *et al.*, 2008; Cesário *et al.*, 2016; Willems, 2016).

The difficulty surges when it comes to individuals with special needs whether it´s due to a syndrome or other conditions, that may modify normal dental development (Seagriff-Curtin, Pugliese and Romer, 2006; Diz, Limeres, A.F. Salgado, *et al.*, 2011). In such syndromic children, some teeth may appear distorted in the OPG due to the lack of cooperation during the execution of the exam. Chromosomal disorders and syndromes arising from numerical and structural defects of chromosomes often include manifestations affecting the craniofacial region, and many of these chromosomal and multifactorial disorders have characteristic oral manifestations, such as multiple agenesis and late eruption of the deciduous dentition and permanent dentition (Seagriff-Curtin, Pugliese and Romer, 2006; Suri, Tompson and Atenafu, 2011; Patil, Rao and Majumdar, 2014; Pinchi *et al.*, 2018). The prevalence of births with chromosomal anomalies was 34.8 cases/10000 births, Down´s syndrome being the group of congenital anomalies with a higher prevalence (19.6 cases/10000 births) (Cuoghi *et al.*, 2016; Braz, Machado and Dias, 2017).

There are several methods of age estimation through the use of radiography, including the Atlas of London or AlQahtani (AlQahtani, 2012)(Appendix 3) which has already been applied to several populations, including the Portuguese population (Cesário *et al.*, 2016; Pavlović, Pereira and Santos, 2017) and did not present a statistically significant difference with the original population of the method, although a statistically significant bias has been found in the age estimation of males.

1.1. Final considerations

In this way, the objective of this investigation is to validate the Atlas of AlQahtani, by means of panoramic radiographs, in a population with physical and mental congenital deficiencies, in order to be able to estimate chronological age in a medical-legal context.

2. OBJECTIVES

2.1. Main objective

The main objective of this research was to estimate the chronological age of a population with a special needs consultation at the Faculdade de Medicina Dentária da Universidade de Lisboa (FMDUL) and at the Hospital Santa Maria (HSM), within the scope of medical-legal identification, through the application of the Atlas of AlQahtani. This study was based on the analysis of OPGs. For this purpose, the following experimental hypotheses were formulated:

2.1.1. Difference between chronological age and estimated dental age

H0: There are no statistically significant differences between the medians of chronological age and of the estimated dental age by the Atlas of AlQahtani.

H1: There are statistically significant differences between the medians of chronological age and of estimated dental age by the Atlas of AlQahtani.

2.1.2. Difference between under or over 16 years of age

H0: There are no statistically significant differences between the accuracy of age estimates obtained by Atlas of AlQahtani in children under 16 years and over 16 years old.

H1: There are statistically significant differences between the accuracy of age estimates obtained by Atlas of AlQahtani in children under 16 years and over 16 years old.

2.2. Secondary objectives

Corroborate if there are any differences between the application of the method to the left side and the right side in the OPGs; if there are any differences between the application of the method to the male gender (MG) and to the female gender (FG); and differences between institutions;

For this purpose, the following experimental hypotheses were formulated:

2.2.1. Difference between left and right side

H0: There are no statistically significant differences between age estimates obtained by Atlas of AlQahtani through the left side and through the right side.

H1: There are statistically significant differences between age estimates obtained by Atlas of AlQahtani through the left side and through the right side.

2.2.2. Difference between gender

Corroborate if there are any differences between the MG and the FG. For this purpose, the following experimental hypotheses were formulated:

H0: There are no statistically significant differences between the accuracy of age estimates obtained by the Atlas of AlQahtani to the MG and to the FG.

H1: There are statistically significant differences between the accuracy of age estimates obtained by the Atlas of AlQahtani to the MG and to the FG.

2.2.3. Difference between institutions

Corroborate if there are any differences between FMDUL and HSM. For this purpose, the following experimental hypotheses were formulated:

H0: There are no statistically significant differences between the accuracy of age estimates obtained by the Atlas of AlQahtani in the FMDUL and in the HSM.

H1: There are statistically significant differences between the accuracy of age estimates obtained by the Atlas of AlQahtani in the FMDUL and in the HSM.

3. MATERIALS AND METHODS

3.1. Experimental design

The research was carried out at the Faculdade de Medicina Dentária da Universidade de Lisboa (FMDUL) and Hospital de Santa Maria (HSM) and had as target a population of patients with special needs from these two institutions whose clinical records are in the Pre-Graduation Clinics in Dental Medicine, Oral Hygiene, in the Department of Post-Graduation in Orthodontics and in the Service of Stomatology of Centro Hospitalar Lisboa Norte, EPE.

The sample was selected from the referred population through a systematic sampling process and would comprise a minimum of 100 cases of both genders, aged between 2.5 and 23 years, all with an OPGs. In this study, a total of 163 OPGs were analyzed, from 133 patients, of which 60 were females (76 OPGs) and 73 were males (87 OPGs), collected from the Faculdade de Medicina Dentária da Universidade de Lisboa and Centro Hospitalar Lisboa Norte, EPE. The chronological age of each subject was calculated by subtracting the date of the X-ray from the date of birth, after converting both into months. The experimental protocol was evaluated by the Ethics Committee of FMDUL and duly authorized by this entity (Appendix 4) and by Professor Doutor Francisco Salvado, director of the stomatology service of the special needs appointments of HSM.

3.2. Population sample

The selection of the sample was based on the following criteria:

3.2.1. Inclusion criteria

(a) Dental parameters:

- Presence of healthy teeth that are in the period of mineralization and eruption.

(b) Identification parameters:

- Age between 2.5 years and 23 years.

3.2.2. Exclusion criteria

(a) Dental parameters:

- Presence of extensive dental caries lesions;
- Presence of direct or indirect restorations;
- Presence of trauma or dental fracture;
- Presence of periodontal disease;

- Presence of dental rotations;
- Presence of dental rehabilitation with fixed prosthesis;
- Presence of orthodontic appliance;
- Presence of internal or external dental resorption, calcification, pulp fibrosis or periapical pathology;
- Presence of endodontic treatment.

(b) Radiographic parameters:

- Presence of dental overlaps, which interfere with the application of the Atlas of AlQahtani;
- Distortion on the radiograph.

3.3. Data Collection

The data that was obtained from the clinical files where:

- Number of the file;
- Date of birth (DoB);
- Gender;
- Date of the radiography (DoR), with the corresponding age at that moment, in years and months;
- Systemic disease of the patient (Appendix 5).

The OPGs were assigned with an individual number, which was different from the protocol number to ensure the confidentiality of data. The dental classification utilized for the tables was FDI World Dental Federation Notation. All data was recorded on four sheets of *Microsoft Excel*®:

- The first sheet which contains the sample number and the corresponding clinical file number, name of the patient, DoB and age (registered in years and months), DoR (registered in years and months) and the diagnosed systemic disease (DsD). Chronological age was calculated using the simple formula DoB and DoR registered in years and months. This sheet was eliminated once the investigation was terminated;
- A second sheet, that contains the sample number, gender, institution and all data collected following the application of the Atlas of AlQahtani (Appendix 6 (right side) and Appendix 7 (left side));
- A third sheet that contains sample number, gender, institution and all the data collected following the repetition of the application of the Atlas of AlQahtani on 10% of the sample (Appendix 8);

- A fourth sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (Appendix 9).

3.4. Methodologies of the study analysis

The radiographs where analyzed following the mineralization table proposed by AlQahtani by means of the following steps:

a) Compare the radiographic image of each of the teeth in formation and recording the data in *Microsoft Excel*® sheets;

b) Estimate the mineralization stage of each tooth analyzed and identify the time interval (in months and years) to which it corresponds;

c) After the analysis of all the teeth, obtain a series of minimum and maximum estimated values;

d) The minimum and maximum age discrepancies where discarded to reduce possible errors;

e) Register the mean of the estimated minimum ages and another of the estimated maximum ages, thus establishing the probable age range of the examined at the time of the radiographic examination;

f) When the tooth examined was between two stages of mineralization, it was considered the upper limit of the lower stage and the lower limit of the upper stage. After the radiographic analysis, a comparison of the estimated age range of each individual with their actual age, which until then was unknown by the researchers, will be performed.

3.5. Data validation methodology

The data of the clinical files was collected by the author and by a second appraiser, therefore it was necessary to evaluate the Intra-class correlation (ICC), thus the interobserver and intraobserver reliability was calculated. In summary, when researchers report measurement variability, it is critical that they report exactly what they mean. The lowest level of variability occurs when a predefined frame within the clip was re-measured by the original observer (intraobserver variability) or a second one (interobserver variability). A second level occurs when different clips/frames from the same study are chosen for reanalysis. For each sample case an age estimate was assigned for each tooth and for the left and right side of every sample case, as well as analysis by institution, gender and age group.

This is a validation measure of the method used to evaluate the degree of agreement of the results, generally ranging from 0 to 1. The distribution of the difference

between the results of the same observer and between the two observers was obtained, and the agreement was measured through the intraclass correlation coefficient that can be interpreted as follows (Fleiss, 1999):

- Up to 0.39 – Poor agreement;
- Between 0.40 and 0.74 – Moderate to good agreement;
- Superior then 0.75 – Excellent agreement.

3.5.1. Interobserver validation

Intra-class correlation (ICC) was calculated to evaluate interobserver reliability. The interobserver variability corresponds to the lack of reproducibility between two or more observers. When this discrepancy occurs, errors are introduced. To reduce random errors, the validation of the data collected from the clinical files was performed by two previously calibrated observers and the degree of interobserver variability was assessed, as both observers would apply the same method to multiple OPGs to reduce possible bias. All cases were evaluated by both observers individually.

3.5.2. Intraobserver validation

Intraobserver variability consists of non-reproducibility of data due to the involuntary alteration of the application of the criteria over time, leading to the introduction of systematic errors at any time.

Systematic errors should be avoided by clearly applying the defined criteria. To reduce random errors, the validation of the data collected by the author will be done by a repetition of a predetermined number of observations with an interval period large enough to eliminate the memory effect. This interval was of 3 months and with a reanalysis of 10% of the sample was performed, a total of 17 radiograms. The sample selection was on a random basis.

The data obtained in the first analysis was concealed from the author during the repetition of the observations. Subsequently, the values obtained in the first analysis were compared with those of the second analysis (intraobserver agreement) and the second observer (interobserver agreement).

To avoid that the results of the study were favored in any way that it favors the agreement between results, these were kept in different sheets of *Microsoft Excel*® where only the codes corresponding to the randomly selected individuals were recorded.

3.6. Statistical analysis

The Statistical analysis of the data was performed using the statistical data analysis software *IBM® SPSS® Statistics* 25 (*Statistical Package for the Social Sciences*). The program was used to make a datasheet, to enter, check and analyze the data. For all tests, the significance level was 5% (α=0.05). This indicates the probability of rejecting the null hypothesis when it is true. To obtain the estimated age in function of the institution, gender and age group, the means, medians, minimum and maximum of each of these variables were calculated, and the Wilcoxon non-parametric test for related samples applied to compare the medians. Parametric tests were not applied since the normality of any of the variables under study was always rejected in the application of the Kolmogorov-Sminrnov test (all obtained p-values were equal or quite close to zero). These results were already expected as the variables are valued in number of months and therefore they are not truly continuous. In addition to the chronological age, the age estimates obtained by Atlas of AlQahtani though the left side and through the right side, the following variables were used:

- Dif_Right_Real = Estimated age London atlas right (months) - Chronological age (months);
- Abs_Dif_Right_Real = Absolute value of Dif_Right_Real;
- Dif_Left_Real = Estimated age London atlas left (months) - Chronological age (months);
- Abs_Dif_Left_Real = Absolute value of Dif_Left_Real;
- Dif_Right_Left = Estimated age London atlas right (months) - Estimated age London atlas left (months);
- Abs_Dif_Right_Left = Absolute value of Dif_Right_Left.

4. RESULTS

4.1. Descriptive analysis

For this study a sample of 163 orthopantomograms from two institutions, FMDUL (n=112) and HSM (n=51), were collected from 133 patients. The sample from FMDUL represents 68.7% and HSM sample represents 31.3% of the over-all sample. The distribution between institutions was not symmetrical (Chart 1).

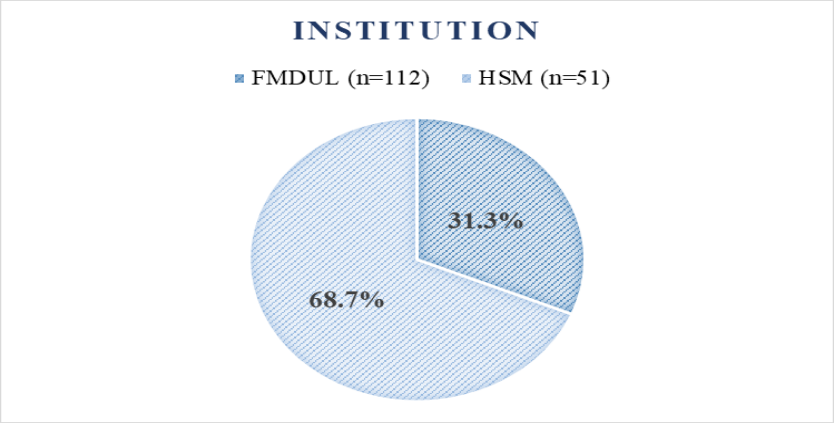


Chart 1 - Sample distribution by institution

The sample entailed 133 individuals (60 female and 73 male), of which a total of 163 orthopantomograms were used for this study, of whom 76 were female and 87 were male, aged between 4 and 23 years. The distribution of the sample within each institution by age and gender shows a larger number of individuals in the age groups of 10, 11 and 17 years. The male gender (MG) sample represents 53.4% and the female gender (FG) represents 46.6% of the total sample (n=163) (Appendix 10).

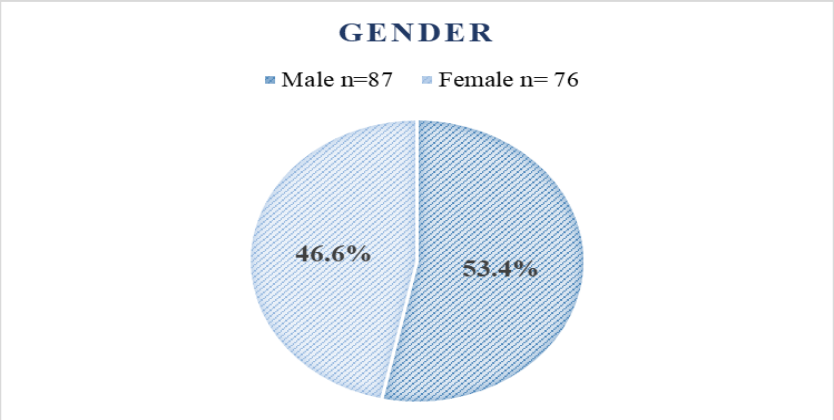
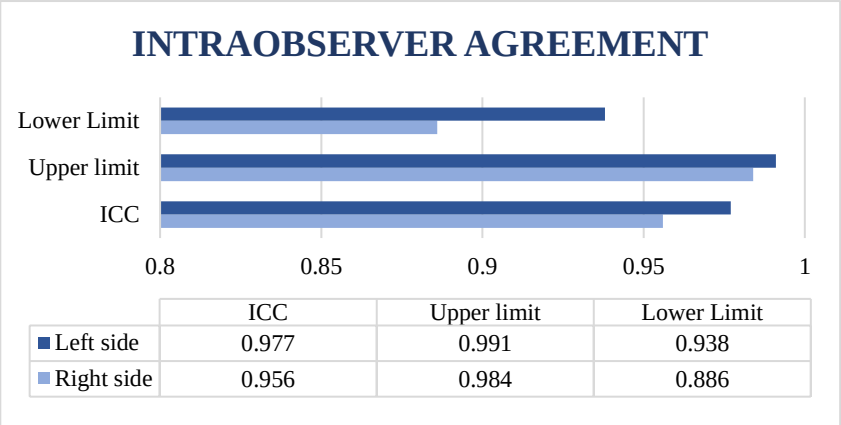


Chart 2 - Sample distribution by gender

4.2. Intraobserver agreement

The intraobserver agreement was evaluated using the intraclass correlation coefficient (ICC) for the right and the left side. For that, a reanalysis of 10% (n=17) of the observations of the total sample was conducted after a period of 3 months (Appendix 8).



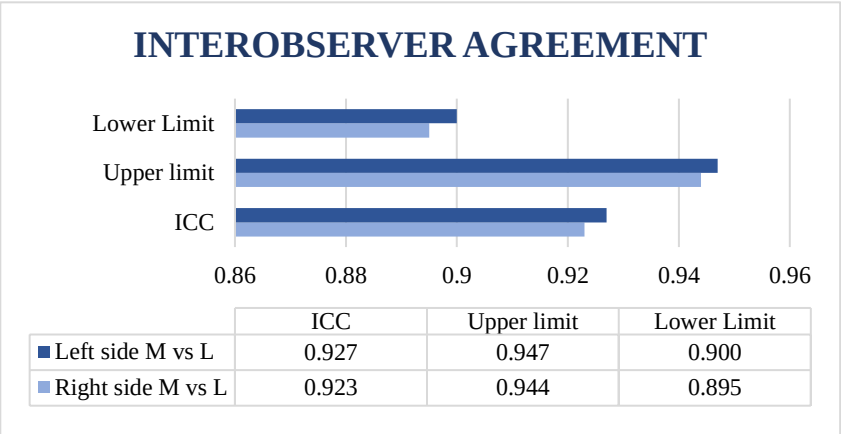
	ICC	Upper limit	Lower Limit
Left side	0.977	0.991	0.938
Right side	0.956	0.984	0.886

Chart 3 - Intraobserver agreement

The values of 0.956 (London_Right_1 *versus* a London_Right_2) and 0.977 (London_Left_1 *versus* a London_Left_2), correspond to an almost perfect agreement. The upper and lower limits for the right side were 0.984 and 0.886, correspondingly, as for the left side, upper and lower limits were 0.991 and 0.938, correspondingly (Chart 3). This suggests that good results were obtained, with no problem for the intraobserver analysis (Appendix 11). Moreover, the same estimates were obtained in both evaluations in the majority of the individuals, without any significant differences in the others (despite 36 months difference in one case) (Appendix 12).

4.3. Interobserver agreement

The interobserver agreement was evaluated using the intraclass correlation coefficient (ICC) for both observers. They were denominated as observer M and observer L. For the analysis of the right side, from the total sample n=163 (100%), a sample of 157 (96.3%) was used due to the exclusion of 6 (3.7%). As for the left side, from the total sample n=163 (100%), a sample of 156 (95.7%) was used due to the exclusion of 7 (4.3%). The values of 0.923 (London_Right_M *versus* London_Right_L) and 0.927 (London_Left_M *versus* London_Left_L), correspond to an almost perfect agreement between observers (Appendix 13) (Chart 4).



	ICC	Upper limit	Lower Limit
Left side M vs L	0.927	0.947	0.900
Right side M vs L	0.923	0.944	0.895

Chart 4 - Interobserver agreement

The upper and lower limits for the right side where 0.944 and 0.895, correspondingly, as for the left side, upper and lower limits where 0.947 and 0.900, correspondingly. This suggests that good results were obtained, thus, in both cases the values are good, with no problem at the level of the interobserver analysis (Appendix 13).

However, when comparing the estimates, it was observed that in some cases there are a few discrepancies between observers, therefore some considerations on the comparison between the estimates of the two observers should be mentioned (Table 1) (Appendix 14):

- On both sides there were 3 cases (1.9%) with an error greater than 48 months, as well as 9 cases with error equal to 48 months (5.7%). Nevertheless, in most cases, 116 (73.9%) on the right side and 121 (77.6%) on the left side, the difference is at most 12 months;
- The mean difference between the estimates from the two observers for the right (as well as for the left) side was 4 months.

Difference in estimates (months)	Right_M – Right_L	Left_M – Left_L
-72	1	1
-48	1	1
-36	4	2
-24	9	8
-12	24	27
0	53	53
12	39	41
24	11	11
36	5	2
48	8	8
60	2	2
Total	**157**	**156**
Absent	**6**	**7**

Table 1 - Interobserver differences

4.4. Right *versus* left

For this evaluation the total sample of n=163 was utilized. Some considerations on the comparison between the right and left side estimation using the Dif_Right_Left and Abs_ Dif_Right_Left variables:

- The difference between the two estimates was, on average, 0.07 months;
- In one individual the difference between the two estimates was 36 months,
- In 7 individuals the difference between the two estimates was 24 months (in 3 the right estimate was higher than the left and the other 4 the opposite);
- In 40 individuals it was 12 months (in 23 the right estimate was higher than the left and in the remaining 17 the opposite was the case);
- In the remaining 115 cases (70.6% of the sample) the estimates are the same.

In the Wilcoxon non-parametric test for comparison of medians in related samples, the test p-value was 0.864, therefore the conclusion is to not reject the null hypothesis, so there is no evidence that the median of the two estimates is different. This analysis seems to illustrate that there are no significant differences between the two estimates (right *versus* left) although this conclusion does not state anything about the accuracy of the obtained estimates, since they have not yet been compared with the chronological age (Appendix 15).

4.5. Accuracy of estimates

Some considerations about the Estimated age London atlas right using the Dif_Right_Real (Appendix 16) and Abs_ Dif_Right_Real variables (Appendix 17):

- The underestimation is, on average, 11.64 months (the estimate obtained was, on average, 11.64 months below the chronological age);
- The observed maximum underestimation error was 123 months (there was an individual whose estimate was 123 months below the chronological age);
- The observed maximum error of overestimation was 67 months (there was an individual whose estimate was 67 months higher than the chronological age);
- The average error of estimation (in absolute value) was about 22 months;

Since the t-test should only be used in variables with a normal distribution (which is not the case), Wilcoxon's non-parametric test to compare the right estimates with the

real age was applied for related samples, which compares the medians. The test p-value was 0.000 (reject the null hypothesis, so there is evidence that the median is different).

Some considerations about the Estimated age London atlas left using the variables Dif_Left_Real (Appendix 18) and Abs_Dif_Left_Real (Appendix 19):

- The underestimation was, on average, 11.71 months (the estimate obtained was, on average, 11.71 months below the chronological age);
- The observed maximum underestimation error was 123 months (there was an individual whose estimate was 123 months below the chronological age);
- The maximum error of overestimation was 67 months (there was an individual whose estimate was 67 months higher than the chronological age);
- The average error of estimation (in absolute value) was about 22.31 months.

In the Wilcoxon non-parametric test for comparison of medians in related samples, the value of the test p-value was 0.000, therefore the conclusion was equivalent (reject the null hypothesis so there is evidence that the median is different). Therefore, it seems that the estimates obtained on both sides are biased, i.e., that a systematic error was made when using this estimation procedure.

4.6. Institution

When separating the HSM (n=51) data from the FMDUL (n=112) some differences were observed (Appendix 20).

4.6.1. HSM

In the HSM data, there was a trend for underestimation, on average, of 8.43 months (right side) and of 7.96 months (left side). The average error of estimation (in absolute value) was, for the right side, 17.96 months and for the left side 18.67 months. On both sides, the observed maximum underestimation error was 77 months and the maximum error of overestimation was 33 months. When we compare right *versus* left the average error was 0.47 months (absolute value of 3.29), where the maximum difference was 36 months.

In the non-parametric hypotheses tests, it seems to reach the same conclusions, to reject the equality of averages and/or medians when comparing estimates with the real values:

- p-value = 0.020 (right *versus* real);

- p-value = 0.060 (left *versus* real);
- p-value = 0.776 (right *versus* left).

The results showed a discrepancy in the estimation of right *versus* real and left *versus* real which prevents us from making a full conclusion as to whether the null hypothesis can or not be rejected. Overall, we can still establish a trend towards underestimation and there were no statistically significant differences between estimates right *versus* left. Although the p-value is higher than the 5% significance level, the difference is minimal. Nevertheless, based only on the p-value the null hypothesis should not be rejected.

4.6.2. FMDUL

In the FMDUL data, there was an error of underestimation, in average, of 13.10 months (right side) and of 13.42 months (left side). The average error of estimation (in absolute value) was 23.94 months for the right side and 23.97 months for the left. On both sides, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 67 months. When we compare right *versus* left the average difference was 0.32 months (absolute value of 4.61), where the maximum difference between the two estimates was 24 months.

In the non-parametric hypotheses tests, it seems to arrive to the conclusion to reject the equality of averages and/or medians when comparing estimates with the real values:

- p-value = 0.000 (right *versus* real);
- p-value = 0.000 (left *versus* real);
- p-value = 0.726 (right *versus* left).

There seems to be significant differences between the estimates (left and right) and real age, with no differences between the right *versus* left.

4.6.3. HSM *versus* FMDUL

In the application of tests to compare the means and/or medians of the estimation errors of HSM data with those of FMDUL no significant differences were found:

- p-value = 0.302 Dif_Right_Real (HSM *versus* FMDUL);
- p-value = 0.272 Dif_Left_Real (HSM *versus* FMDUL);
- p-value = 0.495 Dif_Right_Left (HSM *versus* FMDUL).

Thus, we cannot reject the equality of the estimates accuracy when we compare the estimates from HSM to the estimates from FMDUL.

4.7. Gender

When separating the data in the gender group (FG *versus* MG) we have n=87 MG and n=76 FG. We also noticed some differences amongst them but none statistically significant (Appendix 21).

4.7.1. Male gender

In the MG there was an error of underestimation, on average, of 15.31 months (right side) and 15.86 months (left side). The average error of estimation (in absolute value) was, for the right side was 22.44 months and for the left side was 23.01 months. On the right side, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 33 months. As for the left side, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 37 months. When we compare right *versus* left the average difference was 0.55 months (absolute value of 4.14), where the maximum difference was 24 months.

In the non-parametric hypothesis tests, we reached the following results:

- p-value = 0.000 (right *versus* real);
- p-value = 0.000 (left *versus* real);
- p-value = 0.567 (right *versus* left).

In the MG, there seems to be significant differences between the estimates (left and right) and real age, with no differences between the right *versus* left.

4.7.2. Female gender

In the FG there was an error of underestimation, on average, of 7.43 months (right side) and 6.96 months (left side). The average error of estimation (in absolute value) was, for the right side 21.64 months and for the left 21.51 months. On the right side, the observed maximum underestimation error was 91 months and the maximum error of overestimation was 67 months. As for the left side, the observed maximum underestimation error was 79 months and the maximum error of overestimation was 67 months. When we compare right *versus* left the average difference was 0.47 months (absolute value of 4.26), where the maximum difference was 36 months.

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.032 (right *versus* real);
- p-value = 0.052 (left *versus* real);
- p-value = 0.705 (right *versus* left).

The results showed a discrepancy in the estimation of right *versus* real and left *versus* real which prevents us from making a full conclusion as to whether the null hypothesis can or not be rejected. Overall, we can still establish a trend towards underestimation and there were no statistically significant differences between estimates right *versus* left. When analyzing the accuracy of the estimates, there is a p-value higher than the 5% significance level, but the difference is minimal, therefore, based only on the p-value the null hypothesis should not be rejected on the left side. This case seems to indicate that we are on the threshold of rejecting and not rejecting the null hypothesis, because it does not detect differences between the left and right estimates, nor between the left estimates and the real values, but it detects between the right estimates and the real values.

4.7.3. Male *versus* Female gender

In the application of tests to compare the medians of the errors of the data MG with the FG, no significant differences were presented in the non-parametric test:

- p-value = 0.133 Dif_Right_Real (MG *versus* FG);
- p-value = 0.073 Dif_Left_Real (MG *versus* FG);
- p-value = 0.563 Dif_Right_Left (MG *versus* FG).

Thereby, the results reveal no significant differences between MG and FG.

4.8. Age

When separating the data into the age groups, we noticed some differences between the different groups of under and at least 16-years of age. When we separate the age groups into the subgroups of up to 6 years, between 7 and 12 years, between 13 and 16 years, and at least 17 years old we can appreciate different results in the age estimation (Appendix 22).

4.8.1. Under 16 years of age (m16) and over 16 years of age(M16)

When dividing the sample into two groups, under 16 years (m16) and at least 16 years (M16), the results are completely dissimilar. For this section we have 93 individuals for m16 and 70 individuals for M16 (Appendix 23).

4.8.1.1. m16

For this group we have n=93, there was an error of underestimation, on average, of 0.75 months (right side) and 0.37 months (left side). The average error of estimation (in absolute value) was, for the right side 14.80 months and for the left 14.11 months. On the right side, the observed maximum underestimation error was 51 months and the maximum error of overestimation was 67 months. As for the left side, the observed maximum underestimation error was 63 months and the maximum error of overestimation was 67 months. When we compare right *versus* left the average difference was 0.39 months (absolute value of 2.97), where the maximum difference was 24 months.

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.532 (right *versus* real);
- p-value = 0.859 (left *versus* real)
- p-value = 0.549 (right *versus* left).

The results reveal no significant differences; therefore, the null hypothesis is not rejected on both sides, either comparing to real age or when comparing sides. Of the 93 m16 individuals there were 90 (96.8%) (same estimates on the left and right sides) that were well classified as m16.

4.8.1.2. M16

For this group we have n=70, there was an error of underestimation, on average, of 26.10 months (right side) and 26.79 months (left side). The average error of estimation (in absolute value) was, for the right side 31.73 months and for the left 33.21 months. On the right side, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 32 months. As for the left side, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 37 months. When we compare right *versus* left the average difference was 0.69 months (absolute value of 5.83), where the maximum difference was 36 months.

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.000 (right *versus* real);
- p-value = 0.000 (left *versus* real);
- p-value = 0.557 (right *versus* left).

In this group (M16) the null hypothesis is clearly rejected (p-value equal to zero) in the first two hypothesis tests. Of the 70 M16 individuals there are 53 (75.7%) (right) and 52 (74.3%) (left) who have an estimate of at least 16 years of age. (Appendix 23). As in the previous cases, no differences were verified in right *versus* left estimates.

4.8.2. Different age groups

4.8.2.1. Up to 6 years of age

For this group we have n=7, there was an error of overestimation, on average, of 4.57 months (right side) and 2.86 months (left side). The average error of estimation (in absolute value) was, for the right side 8.00 months and for the left 6.00 months. On the right side, the observed maximum underestimation error was 8 months and the maximum error of overestimation was 20 months. As for the left side, the observed maximum underestimation error was 8 months and the maximum error of overestimation was 11 months. When we compare right *versus* left the average difference was 1.71 months (absolute value of 5.14), where the maximum difference was 12 months (Appendix 22).

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.395 (right *versus* real);
- p-value = 0.268 (left *versus* real);
- p-value = 0.564 (right *versus* left).

The estimates seem to be unbiased in this age group, therefore the null hypothesis is not rejected (both for right and the left side *versus* real). Also, no differences between right *versus* left were found.

4.8.2.2. Between 7 and 12 years of age

For this group we have n=59, there was an error of overestimation, on average, of 2.02 months on both sides. The average error of estimation (in absolute value) was, for the right side 15.10 months and for the left 14.97 months. On the right side, the observed maximum underestimation error was 51 months and the maximum error of overestimation was 67 months. As for the left side, the observed maximum underestimation error was 63 months and the maximum error of overestimation was 67

months. When we compare right *versus* left the average difference was 0 months (absolute value of 2.44), where the maximum difference was 24 months (Appendix 22).

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.453 (right *versus* real);
- p-value = 0.311 (left *versus* real);
- p-value = 1.000 (right *versus* left).

Therefore, the estimates seem to be unbiased in this group. The null hypothesis is not rejected (both for the right and the left side *versus* real). Also, no differences were found between right *versus* left estimates.

4.8.2.3. Between 13 and 16 years of age

For this group we have n=37, there was an error of underestimation, on average, of 7.95 months (right side) and 6.97 months (left side). The average error of estimation (in absolute value) was, for the right side 16.11 months and for the left 16.59 months. On the right side, the observed maximum underestimation error was 30 months and the maximum error of overestimation was 33 months. As for the left side, the observed maximum underestimation error was 50 months and the maximum error of overestimation was 37 months. When we compare right *versus* left the average difference was 0.97 months (absolute value of 4.22), where the maximum difference was 24 (Appendix 22).

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.006 (right *versus* real);
- p-value = 0.026 (left *versus* real);
- p-value = 0.477 (right *versus* left).

In this group the results reveal significant differences between estimates and real age, thus the estimates seem to be biased towards underestimation. The null hypothesis was rejected (both for the right and the left side *versus* real). No differences between right *versus* left estimates were found.

4.8.2.4. At least 17 years of age

For this group we have n=60, there was an error of underestimation, on average, of 29.23 months (right side) and 29.83 months (left side). The average error of estimation (in absolute value) was, for the right side 34.23 months and for the left 34.97 months. On

both sides, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 32 months. When we compare right *versus* left the average difference was 0.60 months (absolute value of 5.80), where the maximum difference was 36 (Appendix 22).

In the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.000 (right *versus* real);
- p-value = 0.000 (left *versus* real);
- p-value = 0.583 (right *versus* left).

In this group the results reveal significant differences between estimates and real age, thus the estimates seem to be biased towards underestimation. The null hypothesis was rejected (both for the right and the left side *versus* real). No differences between right *versus* left estimates were found.

4.9. Disease

For this section, a division was made into two groups of the diagnosed diseases of the population in study. A group where no repercussions in the mineralization and dental eruption was evident and a group where dental repercussions where evident. The repercussions group was divided into several sub-groups where we divided the systemic diseases into Down´s Syndrome, chromosomic alterations, syndromes and central nervous system (Appendix 5, 24 and 25).

4.9.1. Without dental repercussions

In this group without dental repercussions we have n=68. These groups were sub-divided as follows:

4.9.1.1. Pathologies with no dental symptoms

For this group we have n=19, there was an error of underestimation, on average, of 6.84 months (both right and left sides). The average error of estimation (in absolute value) was for both sides 22.21 months. On the right side, the observed maximum underestimation error was 48 months and the maximum error of overestimation was 39 months. As for the left side, the observed maximum underestimation error was 60 months and the maximum error of overestimation was 27 months. When we compare right *versus* left the average difference was 0.00 months (absolute value of 2.53), where the maximum difference was 12 months.

4.9.1.2. Others

For this group we have n=49, there was an error of underestimation, on average, of 6.22 months (right side) and 7.45 months (left side). The average error of estimation (in absolute value) was, for the right side 21.69 months and for the left 21.24 months. On both sides, the observed maximum underestimation error was 123 months and the maximum error of overestimation was 67 months. When we compare right *versus* left the average difference was 1.22 months (absolute value of 3.18), where the maximum difference was 24 months.

4.9.2. With dental repercussions

In this group with dental repercussions we have n=95. These groups were sub-divided as follows.

4.9.2.1. Down´s Syndrome

For this group we have n=23, there was an error of underestimation, on average, of 22.48 months (right side) and 20.91 months (left side). The average error of estimation (in absolute value) was, for the right side 32.04 months and for the left 29.61 months. On both sides, the observed maximum underestimation error was 77 months and the maximum error of overestimation was 29 months. When we compare right *versus* left the average difference was 1.57 months (absolute value of 7.83), where the maximum difference was 36 months.

4.9.2.2. Chromosomic alterations

For this group we have n=11, there was an error of underestimation, on average, of 19.27 months (right side) and 16.00 months (left side). The average error of estimation (in absolute value) was, for the right side 24.00 months and for the left 24.73 months. On the right side, the observed maximum underestimation error was 60 months and the maximum error of overestimation was 26 months. As for the left side, the observed maximum underestimation error was 72 months and the maximum error of overestimation was 26 months. When we compare right *versus* left the average difference was 3.27 months (absolute value of 9.82), where the maximum difference was 24 months.

4.9.2.3. Syndromes

For this group we have n=23, there was an error of underestimation, on average, of 10.17 months (right side) and 12.26 months (left side). The average error of estimation (in absolute value) was, for the right side 14.87 months and for the left 17.91 months. On the right side, the observed maximum underestimation error was 51 months and the maximum error of overestimation was 24 months. As for the left side, the observed maximum underestimation error was 63 months and the maximum error of overestimation was 24 months. When we compare right *versus* left the average difference was 2.09 months (absolute value of 3.13), where the maximum difference was 24 months.

4.9.2.4. Central Nervous System

For this group we have n=38, there was an error of underestimation, on average, of 13.13 months (right side) and 12.50 months (left side). The average error of estimation (in absolute value) was, for the right side 20.24 months and for the left 21.29 months. On the right side, the observed maximum underestimation error was 91 months and the maximum error of overestimation was 32 months. As for the left side, the observed maximum underestimation error was 79 months and the maximum error of overestimation was 37 months. When we compare right *versus* left the average difference was 0.63 months (absolute value of 3.16), where the maximum difference was 24 months

For all of the six groups, in the non-parametric hypothesis tests, we reached the following conclusions:

- p-value = 0.255 (right *versus* real);
- p-value = 0.579 (left *versus* real);
- p-value = 0.796 (right *versus* left).

When comparing the medians of the three variables under analysis, the results reveal no significant differences between the six groups, therefore the null hypothesis was not rejected.

4.9.3. With dental repercussions *versus* without dental repercussions

Tables 2 and 3 provide some results about the estimation errors of the group without dental repercussions (control group) and the group with dental repercussions.

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
Average	-6.4	-7.28	,88
Median	-5	-4	0
Minimum	-123	-123	-12
Maximum	67	67	24

Table 2 – Without dental repercussions (control group)

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
Average	-15.39	-14.88	-0.51
Median	-12	-11	0
Minimum	-91	-79	-36
Maximum	32	37	24

Table 3 – With dental repercussions

If we compare the data from both groups, we can verify that the average of the difference between estimated and chronological age in the control group is much lower than in the group with dental repercussions. We can also verify that the median for the control group is much lower than in the other group, which implies that the estimates are less accurate in the group with dental repercussions. On the other hand, the minimum and maximum estimation errors are higher in the control group. As for the difference between right and left side, it is lower in the control group.

The results of the comparison of these groups were the following:

- p-value = 0.044 (right *versus* real);
- p-value = 0.076 (left *versus* real);
- p-value = 0.630 (right *versus* left).

The results show a discrepancy in the estimation of right *versus* real and left *versus* real which prevents us from making a full conclusion as to whether exits significant differences in estimates accuracy between these two groups. One of the p-value is higher than the 5% significance, therefore, based only on the p-value the null hypothesis should not be rejected for left *versus* real, but is rejected for right *versus* real. Thus, it seems to indicate that we are on the threshold of rejecting and not rejecting the null hypothesis, because it does not detect differences between the left and right estimates, nor between the left estimates and the real values, but detects significant differences between the right estimates and the real values.

5. DISCUSSION

5.1. Integrity of the experimental methodology

The intrinsic value of a clinical study is related to the validation of the results obtained and to the generalization of its conclusions. The validity of the results depends on the integrity of the experimental methodology. The possibility of generalization depends on the characteristics of the population used and the conditions of the evaluations.

5.2. Intraobserver and interobserver validity

When it comes to the intraobserver and interobserver reliability, the intraclass coefficient (ICC) is used (Fleiss, 1999). The intraobserver ICC value is 0.956 and 0.977 for the right and left side, respectively, which indicates an excellent agreement, where the 95% confidence interval ranges between 0.886 and 0.984 (right side) and between 0.938 and 0.991 (left side) (Appendix 11). These values are slightly higher than AlQahtani, 2012 (0.879) and Cesário *et al*, 2016 (0.925) but lower than Pavlović *et al.*, 2017 (0.998 and 0.997 for right and left side, correspondingly). As for Pinchi *et al.*, 2018 they reported a 93% agreement.

In the interobserver reliability, ICC for right side is 0.923 and for the left side is 0.927, which corresponds to an almost perfect agreement between the observers, with no problem at the level of the interobserver analysis (Appendix 13). These values are in concordance with Pinchi *et al.* 2018, that have an interobserver agreement of 90%. However, we can observe that in some cases there are a few discrepancies between observers, therefore some considerations on the comparison between the estimates of the two observers should be mentioned (Appendix 14). Nevertheless, in most of the cases, 116 (73.9%) on the right side and 121 (77.6%) on the left side, the difference is at most 12 months. The mean difference between the estimates from the two observers for the right (as well as for the left) side was 4 months indicating concordant results between observers with no experience using the atlas of AlQahtani as a reference (Appendix 3).

5.3. Discussion of the results

One of the main objectives was to analyze whether there are any differences between chronological and estimated age. Since the t-test should only be used in variables with a normal distribution (which is not the case), Wilcoxon's non-parametric test is applied to compare the medians. The atlas of AlQahtani was selected as the method of choice since, compared with other atlas methods, it is the one with the best results, as it

showed no bias (p=0.720) and correctly estimated 53% of the cases in the original thesis (AlQahtani, 2012; Cesário *et al.*, 2016).

In this study, the comparison reveals that there were some errors in the estimates, therefore the accuracy of the estimates was calculated for both right and left side. For comparison purposes, data from the study of Cesário *et al.*, 2016, Pavlović *et al.*, 2017 and Pinchi *et al.*, 2018 was used. The performance test showed a statistically significant difference between age estimation and chronological age. It seems that the estimates obtained on both sides are biased, i.e., a systematic error was made (Right: author p=0.000; Pavlović p=0.104; Left: author p=0.000; Pavlović p=0.052). These results are not consistent with Pavlović *et al.*, 2017, knowing that the main difference between these studies was the population at hand, i.e. patients with syndromes. Although, the error was consistent between sides and no significant difference between age estimation using the right or the left side (author p=0.864; Pavlović p=0.066) was verified. For the author the maximum underestimation was 123 months, (Pavlović 91 months), while the maximum overestimation was 67 months (Pavlović 79 months).

A secondary objective was to analyze differences between institution-based estimates. For the purpose of comparison, only data obtained from FMDUL from our study was used to analyze data from Cesário *et al.*, 2016. For the author there was a statistically significant difference between the left and right side and real age (Right: author p=0.000; Cesário p=0.931; Left author p=0.000; Cesário p=0.927). The results show a discrepancy between studies, which is probably due the different characteristics of the sample. Data from HSM showed a discrepancy in the estimation of right *versus* real and left *versus* real which prevents us from making a full conclusion as to whether the null hypothesis can or not be rejected. A major difference between HSM and FMDUL was the sample size (51 *vs* 112) which could explain the discrepancy above. Data from FMDUL estimates are significantly different for both sides against real age but the data analysis comparing both institutions shows no differences between the two. Overall, we can still establish a trend towards underestimation in both institutions.

Analysis by gender showed a statistically significant difference. In the FG right: p=0.032 (Pavlović p=0.765); left p=0.052 (Pavlović p=0.652). The results reveal a bias on the right side which is not consistent with Pavlović *et al.*, 2017. As for the MG right p=0.000 (Pavlović p=0.008) and left p=0.000 (Pavlović p=0.003), which clearly indicates that there was a bias in age estimation for both authors. Results show that the estimates are closer to the chronological age in FG (mean right -7.43; left -6.96) then in the MG

(mean right -15.31; left -15.86) consistent with Pavlović *et al.,* 2017. Overall, we can still establish a trend towards underestimation in both genders and there was no statistically significant difference between estimates made using FG or MG OPG´s, as for Pavlović *et al.,* 2017 reported underestimation in FG and overestimation in MG.

The other main objective is to analyze if there were any differences between under or at least 16 years of age (m16 *vs* M16). The London Atlas has proven to be a good method in this study with a 96.8% (right and left) success rate for children under 16 years of age (those who must be protected) and a considerable success rate of 75.7% well classified on the right side and 74.3% on the left side for individuals at least 16 years of age. In both age groups there was a tendency to underestimate in this study although, AlQahtani, 2012 and Cesário *et al.,* 2016 demonstrated the opposite. This can be explained by the fact that the author was calibrated to do so, due to the importance of age in legal cases and also the populations portrayed are distinct, and when patients with (more likely to have) slower tooth development are included, estimates should further underestimate age (it is therefore expected that where there is overestimation, here this problem is lower and where there is underestimation, in this population the problem is even more serious). The average underestimation error in the age group m16 was much lower than in the opposite age group M16 (0.75 months right and 0.37 months left for m16 and 26.10 months right and 26.79 months left for M16) although the difference between sides was almost negligible (Pinchi *et al.*, 2018). Furthermore, the results obtained reveal that there was no evidence that the median of the two estimates is different in the under 16 years of age group (right: author p=0.532; Pavlović p=0.000; left: author p=0.859; Pavlović p=0.000) while in the M16 group the difference seems to be significant (right: author p=0.000; Pavlović p=0.105; left: author p=0.000; Pavlović p=0.161). Authors obtained opposite results for these age groups. Due to the results obtained in m16 and M16 groups, we have decided to perform a separate analysis where the sample was divided into different age groups. Out of these, in the under 6 and 7 to 12 years old groups, the estimates are unbiased with a trend towards overestimation. However, the age groups of 13 to 16 and above 17 years old the estimates are biased with a trend towards underestimation.

A last analysis was performed to understand whether there are any statistically significant differences in patients with dental repercussions. Results show a discrepancy in the estimation of right *versus* real and left *versus* real which prevents us from making a full conclusion as to whether the null hypothesis can or not be rejected. Overall, we can

still establish a trend towards underestimation with no statistically significant differences between estimates right *versus* left. Pinchi *et al.*, 2018 reached the conclusion that there are no differences between syndromic and healthy patients.

6. CONCLUSIONS

6.1.From the experimental hypotheses

From the results obtained in this study the following conclusions, related to the formulated experimental hypotheses, tested in the statistical analysis, can be deduced:

Hypothesis 2.1.1. (Chronological *versus* estimated age): there clearly is a difference, for it seems that the estimates are biased, i.e., a systematic error was made;

Hypothesis 2.1.2. (Difference between under or over 16 years of age): the error in M16 was much higher than in m16, the Atlas of AlQahtani can be used as a method in age estimation for legal purposes but with caution towards the 16-year threshold;

Hypothesis 2.2.1. (Difference between left and right side): no differences between sides in all formulated hypothesis;

Hypothesis 2.2.2. (Difference between gender): no differences between genders;

Hypothesis 2.2.3. (Difference between institutions): no differences amongst institutions.

To better study the homogenization of the sample, we divided the sample into with and without dental repercussions: those with dental repercussions have a much higher value of error in underestimation. Therefore, the midpoint in these cases should be increased to 15 months for patients with Down´s syndrome, chromosomic alterations, syndromes and central nervous system disorders. As for those without dental repercussions the midpoint for the author was 7 months.

6.2.General conclusions

The discrepancies between chronological and estimated could be due to the fact not all OPGs are of great quality, making it sometimes difficult to estimate the proper age or an equal age for both sides on the same individual and possible dental variations in such patients. There was a general prevalence for underestimation, except for the age groups of under 6 and 7 to 12 years. As for institution and gender, the same atlas can be used for both circumstances. We also verify that it is easier to classify and estimate age in patients under 16 than over 16 years of age. As these types of patients tend to move moderately during the radiographic exam it would be of great value that the OPGs had better quality, if possible, the use of CBCT, which provides better imaging. Regarding the sample size, some of the groups analysed had a very low number of cases, therefore the conclusions that can be drawn are suggestive and preliminary. We suggest further studies with larger samples to create adequate atlases for all the required scenarios, in particular, diagrams for patients with special needs with approximate age of 16 years.

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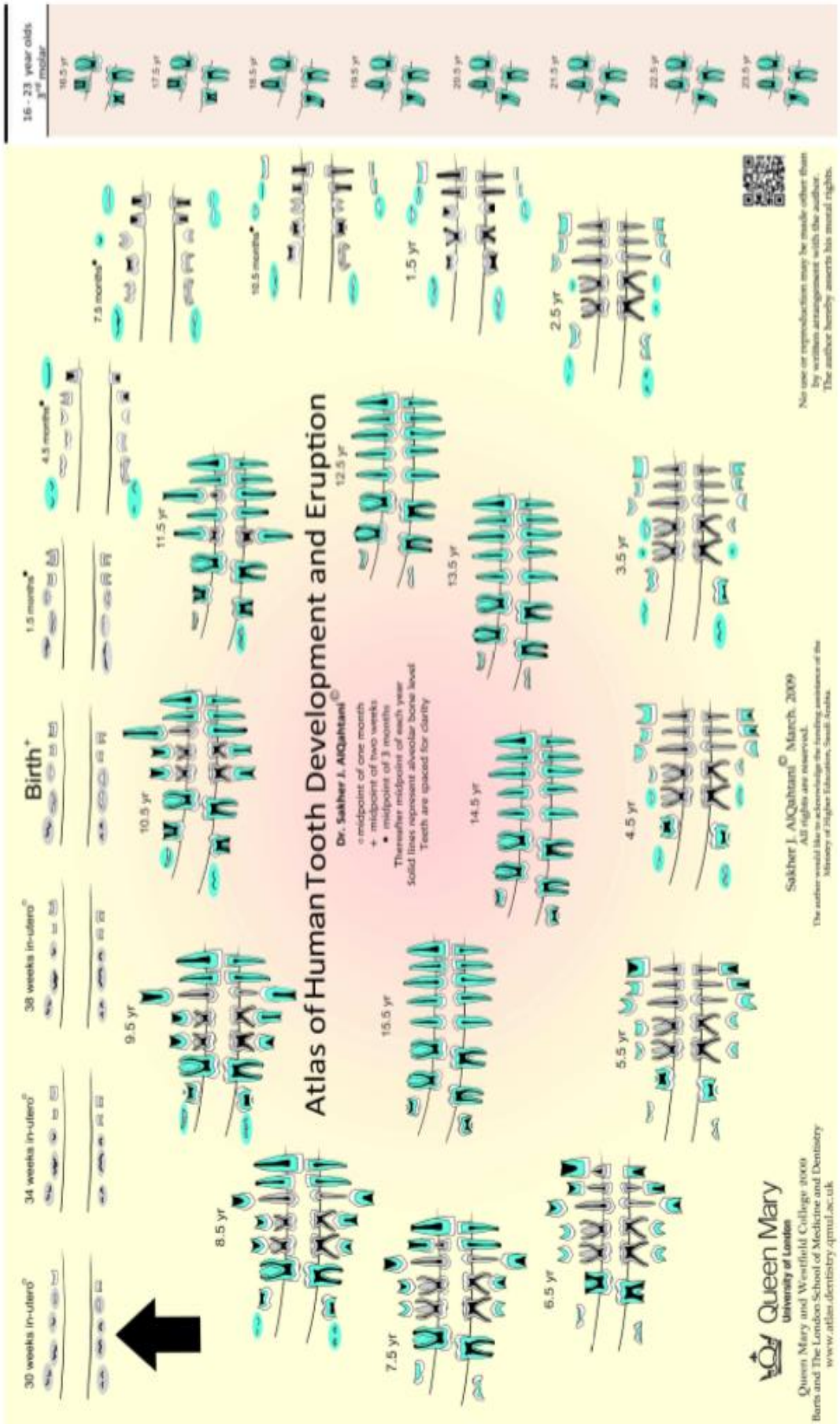
APPENDICES

Appendix 1 - List of abbreviations

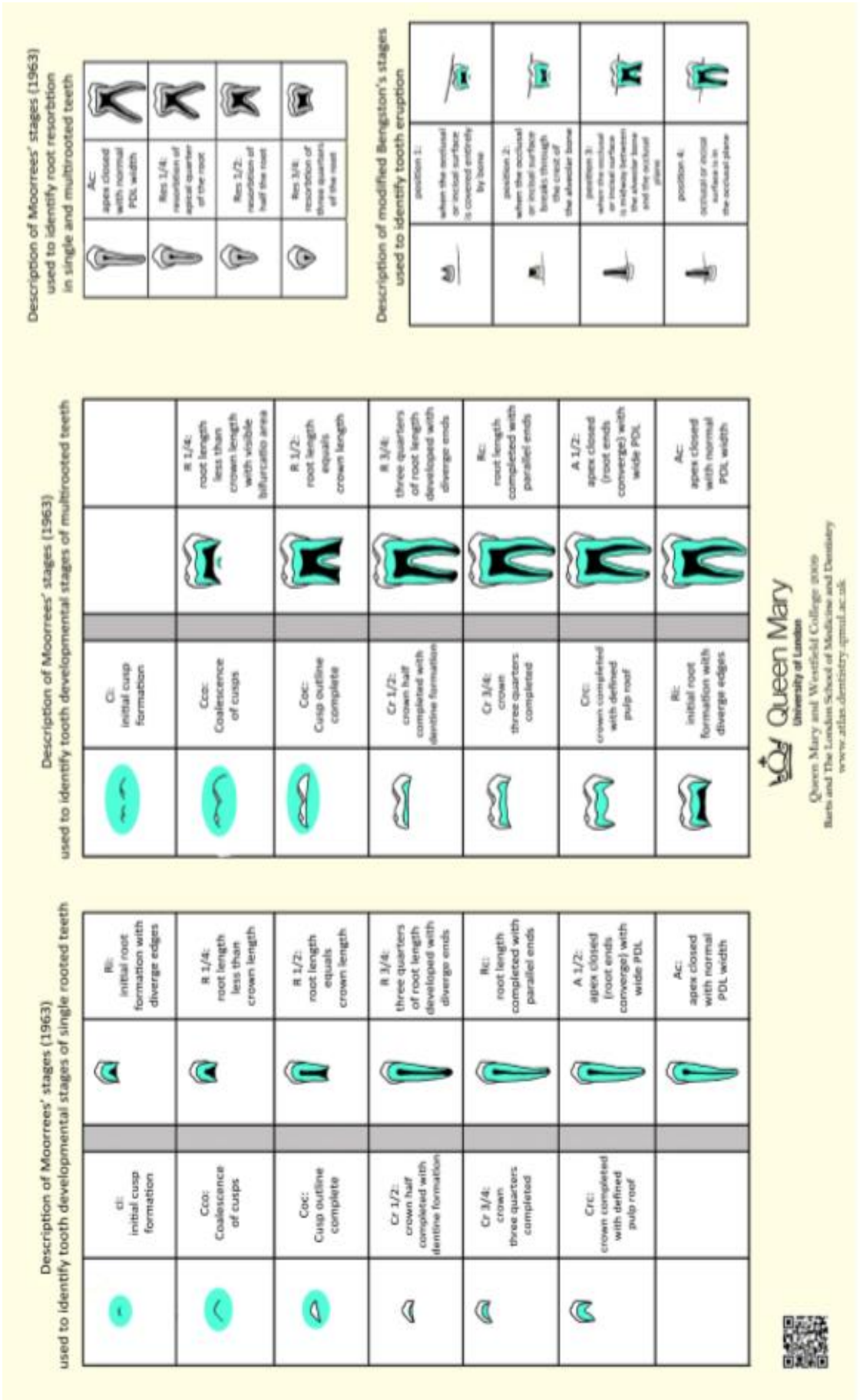
DoB	Date of Birth
DoR	Date of Radiography
DsD	Diagnosed systemic Diseases
FMDUL	Faculdade de Medicina da Universidade de Lisboa
HSM	Hospital Santa Maria
ICC	Intra-Class Correlation
FG	Female Gender
MG	Male Gender
%	Percentage
FDI	FDI World Dental Federation notation
M16	Over 16 years of age
m16	Under 16 years of age
OPG	Orthopantomography

Appendix 2 – List of tables, graphics and figures

Appendix 3 – Atlas of AlQahtani 2009.



Appendix 3 – Atlas of AlQahtani 2009.



Appendix 4 - Favorable appreciation by the Ethics Committee of FMDUL.

FACULDADE DE MEDICINA DENTÁRIA

Comissão de Ética para a Saúde (CES-FMDUL)

PARECER

A Comissão de Ética para a Saúde da Faculdade de Medicina Dentária da Universidade de Lisboa (CES-FMDUL), apreciou o pedido de parecer para a realização de um estudo intitulado **"*Estimativa Médico-legal da Idade numa população de necessidades especiais da Faculdade de Medicina Dentária da Universidade de Lisboa – Aplicação do Atlas de Londres*"** submetido por Lucianna Maria Russell, tendo como orientadores as Professores Doutores Cristiana Maria Palmela Pereira e Rui Filipe Vargas de Sousa Santos.

A CES-FMDUL deliberou e decidiu emitir **parecer favorável**.

Lisboa, 23 de março de 2018

O presidente da CES-FMDUL

(Professor Catedrático João Aquino)

Appendix 5 - Diagnosed Systemic Diseases (DsD).

Diagnosed systemic diseases			
Distribution	**1**	**Downs Syndrome**	
	2	**Chromosomic alterations**	
			Chromosome 1 deletion
			Chromosome 1 Alteration
			Chromosome 4 Deficiency
			Chromosome Alteration
			Deletion Chromosome 16
			Non-Identified Chromosomal Mutation
	3	**Syndromes**	
			Cornelia de Lange Syndrome
			De Charge Syndrome
			DiGeorge Syndrome
			Dravet Syndrome
			Kabuki Syndrome
			KGB Syndrome
			Landau Kleffner syndrome
			McCune Syndrome
			Prader Willi Syndrome
			Rett Syndrome
			Rubiten Syndrome
			Syndrome 47
			Syndrome type 1
			Williams Syndrome
	4	**Central nervous system**	
			Cerebral palsy
			Development delay
			Global development delay
			Embryopathy
			Malformation of Central Nervous System
			Mental retardation
			Microcephaly
			Neural impairment
			Psychomotor development retardation
			Psychomotor retardation
			Slight Mental Retardation
	5	**Others**	
			Arthrogryposis Cognitive Deficits
			Asperger´s
			Autism
			Cognitive impairment
			Encephalitis
			Encephalopathy
			Global cognitive deficit
			Poliformative hypotonic syndrome
			Whithout a closed diagnosis
	6	**Pathologies with no dental symptoms**	
			21 Alpha Hydroxylase Deficiency
			Congenital cardiopathy
			Epilepsy
			Hearing Impairment
			Hyperactivity
			Metabolic diseases
			Muscular dystrophy
			OTC Deficiency
			Polymyositis
			Psycological immaturity
			Severe atopic eczema
			Skeletal side root syndrome
			Spina Bifida

Appendix 6 – *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Right Side.

SPSS	Institution	Gender	18	17	16	15	14	13	12	11	48	47	46	45	44	43	42	41	Right	Months
1	2	2	222	186	100	0	0	100	0	0	198	100	100	100	100	0	0	0	17.5	210
2	2	2	150	150	100	0	0	0	0	0	150	150	100	0	0	138	0	0	13.5	162
3	2	2	198	174	100	0	0	0	0	0	1000	174	114	1000	126	114	0	0	11.5	138
4	2	2	138	126	100	114	114	126	102	126	1000	114	114	1000	126	114	0	0	9.5	114
5	2	1	246	100	100	100	0	0	0	0	100	100	100	100	100	0	100	100	19.5	234
6	2	1	198	1000	100	0	0	100	1000	100	198	0	1000	1000	100	150	100	0	16.5	198
7	2	1	198	100	100	0	0	100	1000	100	198	0	1000	1000	100	150	100	0	16.5	198
8	2	1	1000	0	1000	0	0	0	0	0	1000	150	114	1000	0	0	0	0	12.5	150
9	2	1	0	0	0	0	0	0	0	0	1000	126	114	0	0	0	0	0	10.5	126
10	2	1	150	150	100	150	0	100	0	0	162	150	1000	150	138	138	100	100	12.5	150
11	2	1	1000	138	102	126	126	126	100	126	150	150	114	138	138	0	0	0	11.5	138
12	2	2	1000	0	0	0	100	1000	0	100	1000	0	100	0	0	0	1000	100	14.5	174
13	2	1	0	0	0	0	0	0	0	0	138	138	114	0	0	0	0	0	11.5	138
14	2	1	1000	100	100	100	100	100	100	100	198	174	100	100	100	100	100	100	16.5	198
15	2	1	0	0	0	0	0	0	0	0	0	0	0	126	0	0	0	0	8.5	102
16	2	1	100	100	100	0	0	0	0	0	100	100	100	174	0	0	100	100	22.5	270
17	2	1	198	100	100	100	100	100	126	0	186	100	100	100	100	100	1000	100	16.5	198
18	2	1	150	150	0	0	0	0	0	0	150	138	100	126	138	114	100	100	11.5	138
19	2	1	162	0	0	0	0	0	0	0	1000	0	100	100	100	100	0	0	14.5	174
20	2	2	150	126	0	0	0	0	0	0	150	150	100	0	0	0	0	0	12.5	150
21	2	1	150	150	100	100	0	100	100	100	150	150	1000	162	150	138	0	0	12.5	150
22	2	1	1000	102	90	102	102	114	102	102	1000	114	114	114	102	114	0	102	8.5	102
23	2	2	234	0	0	0	0	0	0	0	0	100	100	100	100	100	0	0	20.5	246
24	2	1	150	90	1000	1000	138	100	100	126	150	90	1000	150	150	0	100	0	12.5	150
25	2	2	1000	100	1000	1000	0	100	0	100	1000	100	100	1000	100	0	100	100	16.5	198
26	2	2	150	126	90	150	138	138	0	0	150	150	100	150	150	100	0	0	12.5	150
27	2	2	174	0	102	0	0	0	0	0	174	174	100	0	0	0	0	0	14.5	174
28	2	2	174	0	102	0	0	0	0	0	174	174	100	0	0	0	0	0	14.5	174
29	2	2	1000	100	100	100	1000	100	100	100	1000	100	100	150	1000	138	100	100	16.5	198
30	2	2	222	100	100	0	0	0	0	0	100	100	100	100	0	100	100	100	19.5	234
31	2	1	234	100	100	0	0	100	126	0	222	100	100	100	0	0	0	0	18.5	222
32	2	1	1000	0	0	100	100	100	0	0	1000	174	100	100	100	100	100	0	14.5	174
33	2	2	1000	102	0	0	0	0	0	0	0	102	90	1000	0	0	0	0	8.5	102
34	2	1	1000	66	54	0	0	54	66	66	1000	66	54	54	42	54	54	54	5.5	66
35	2	1	138	138	102	0	126	126	0	0	138	138	1000	126	138	0	0	100	11.5	138
36	2	1	1000	1000	100	100	100	0	0	126	210	100	100	100	100	0	100	100	17.5	210
37	2	1	1000	0	100	0	0	100	126	100	186	100	100	100	100	0	100	100	15.5	186
38	2	1	246	100	100	100	100	100	126	126	246	100	1000	1000	1000	100	100	100	20.5	246
39	2	1	150	126	100	126	0	0	0	114	162	150	114	126	0	0	0	100	13.5	162
40	2	2	1000	100	100	0	0	0	1000	126	1000	100	100	100	0	0	0	100	16.5	198
41	2	1	114	0	0	0	0	0	0	0	102	126	114	126	0	0	0	0	10.5	126
42	2	1	150	126	100	102	102	114	114	126	150	126	102	114	102	102	0	0	12.5	150
43	2	2	150	174	100	100	100	100	100	100	162	150	100	150	150	126	0	0	12.5	150
44	2	1	198	100	100	0	0	0	0	0	198	100	100	100	100	100	100	100	16.5	198
45	2	1	138	126	100	0	0	0	102	102	114	114	100	126	126	114	114	100	9.5	114
46	2	2	150	150	100	100	100	0	100	100	162	150	100	100	100	100	100	100	13.5	162
47	2	2	138	126	0	126	126	0	0	0	138	126	114	114	0	114	0	0	10.5	126
48	2	2	150	126	100	126	138	0	126	114	126	126	114	114	138	150	102	102	11.5	138
49	2	2	138	0	0	0	0	0	0	0	150	150	100	138	0	0	0	0	11.5	138
50	2	2	150	126	100	138	138	100	114	126	138	138	100	150	150	126	114	100	11.5	138

Appendix 6 – *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Right Side.

51	2	2	222	100	1000	100	100	100	100	100	234	186	1000	100	100	100	100	100	19.5	234
52	2	1	1000	90	66	0	0	66	78	54	1000	90	54	66	66	66	0	54	5.5	66
53	2	2	234	100	1000	100	0	0	0	0	234	100	1000	0	0	0	0	100	19.5	234
54	2	2	114	102	102	102	102	114	102	90	114	126	102	102	102	114	90	90	8.5	102
55	2	2	0	0	0	0	0	0	0	0	234	100	100	0	0	0	0	0	19.5	234
56	2	1	1000	0	0	0	0	0	0	0	1000	78	78	66	54	66	54	54	6.5	78
57	2	1	0	0	0	0	0	0	0	0	162	150	1000	0	0	0	0	0	13.5	162
58	2	1	1000	1000	0	0	0	0	0	0	1000	100	100	0	0	0	0	0	16.5	198
59	2	2	0	0	0	0	0	0	0	0	210	100	1000	0	0	0	0	0	17.5	210
60	2	1	1000	102	100	102	102	0	0	0	1000	114	114	102	102	102	0	0	9.5	114
61	2	2	1000	126	100	150	100	100	126	126	1000	150	100	126	150	150	102	100	12.5	150
62	2	1	1000	54	42	0	0	0	0	0	1000	54	42	0	0	0	0	0	4.5	54
63	2	1	234	100	100	100	100	100	0	0	234	100	100	100	100	100	100	100	19.5	234
64	2	1	150	150	100	150	138	100	100	126	162	150	100	150	138	0	0	0	12.5	150
65	2	1	1000	0	0	0	0	1000	1000	0	1000	150	100	138	138	126	0	0	11.5	138
66	2	1	246	100	100	100	100	100	0	0	246	100	100	100	100	100	100	100	20.5	246
67	2	2	198	100	100	100	100	100	126	100	198	100	100	100	100	100	100	100	16.5	198
68	2	2	198	100	100	100	100	100	126	100	198	100	100	100	100	100	100	100	16.5	198
69	2	2	222	100	0	0	0	0	100	100	198	100	100	100	100	0	0	0	18.5	222
70	2	1	1000	102	0	0	0	0	0	0	102	102	90	102	90	114	102	102	8.5	102
71	2	2	234	100	100	1000	0	0	1000	100	234	100	100	100	0	0	0	0	19.5	234
72	2	2	1000	78	78	66	78	78	0	0	1000	78	78	66	66	66	66	66	6.5	78
73	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17.5	210
74	2	2	234	100	0	0	0	0	0	0	210	100	1000	150	0	0	0	0	18.5	222
75	2	2	0	0	0	0	0	0	0	0	1000	0	1000	100	1000	0	100	100	20.5	246
76	2	1	174	100	100	100	100	100	100	100	1000	100	100	100	100	150	100	100	14.5	174
77	2	1	1000	0	0	0	0	0	0	0	162	0	114	162	100	0	0	0	13.5	162
78	2	1	1000	100	100	100	100	0	0	0	234	100	1000	150	100	0	0	0	19.5	234
79	2	1	222	174	0	0	0	100	100	100	222	100	100	100	100	150	100	100	18.5	222
80	2	1	222	100	100	100	0	100	100	100	1000	100	100	1000	0	0	0	100	18.5	222
81	2	2	1000	100	1000	100	1000	100	100	126	162	100	1000	100	100	100	1000	1000	14.5	174
82	2	2	1000	102	100	1000	126	0	102	102	1000	114	114	1000	114	114	102	102	9.5	114
83	2	2	1000	90	102	1000	102	0	90	90	1000	102	90	1000	90	90	90	90	7.5	90
84	2	2	1000	90	78	1000	90	78	78	78	1000	90	78	1000	78	78	78	90	6.5	78
85	2	2	246	0	100	100	100	0	0	100	234	100	100	100	100	100	100	100	20.5	246
86	2	2	1000	90	90	90	90	90	90	90	1000	90	90	90	90	78	90	90	7.5	90
87	2	2	150	174	102	1000	0	100	0	0	162	174	100	1000	100	150	0	0	13.5	162
88	2	2	150	150	102	150	0	100	126	126	150	150	100	150	100	150	114	100	12.5	150
89	2	2	1000	186	100	0	100	100	100	100	1000	174	100	138	100	150	114	100	15.5	186
90	2	2	1000	102	102	126	126	126	0	126	1000	102	114	102	126	114	102	90	8.5	102
91	2	2	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.5	138
92	2	2	150	138	102	150	0	100	0	126	150	126	114	150	150	150	0	100	12.5	150
93	2	2	114	114	102	0	0	126	0	102	114	114	114	126	138	126	0	100	10.5	126
94	2	2	1000	102	90	0	90	114	78	90	102	102	90	102	114	90	90	90	8.5	102
95	2	2	0	0	0	0	0	0	0	0	222	100	100	1000	100	100	0	0	18.5	222
96	2	2	150	0	0	0	0	0	0	0	162	138	100	150	0	0	0	0	13.5	162
97	2	2	1000	174	100	0	0	100	100	100	1000	174	100	100	100	100	0	100	14.5	174
98	2	1	1000	90	78	66	78	55	78	78	1000	90	78	66	78	66	78	78	6.5	78
99	2	1	138	102	102	126	114	114	0	102	126	102	114	114	102	102	0	0	9.5	114
100	2	2	174	0	100	0	0	100	0	0	174	150	100	150	100	0	0	0	14.5	174

Appendix 6 – *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Right Side.

101	**2**	**1**	198	100	100	100	1000	100	100	100	198	100	100	100	100	100	100	100	16.5	198
102	**2**	**1**	174	174	100	0	0	100	100	100	174	174	100	100	100	100	100	100	14.5	174
103	**2**	**1**	246	100	100	100	100	100	100	100	234	100	1000	100	100	100	100	100	20.5	246
104	**2**	**2**	198	174	1000	0	0	100	0	100	1000	100	0	100	100	100	100	100	16.5	198
105	**2**	**2**	150	0	0	150	162	100	126	126	162	150	100	150	150	0	0	0	12.5	150
106	**2**	**1**	234	100	100	100	100	100	100	100	210	100	1000	100	100	100	100	100	18.5	222
107	**2**	**2**	1000	1000	1000	1000	1000	100	0	0	198	174	100	1000	0	1000	1000	1000	16.5	198
108	**2**	**1**	102	102	102	114	114	114	102	114	102	114	114	126	126	114	114	100	8.5	102
109	**2**	**1**	150	150	1000	150	0	100	0	126	174	174	1000	162	100	13.5	0	0	13.5	162
110	**2**	**1**	1000	100	100	0	0	100	0	0	198	100	100	100	100	0	0	100	16.5	198
111	**2**	**1**	100	100	100	100	100	100	100	126	100	100	100	162	0	0	1000	0	22.5	270
112	**2**	**1**	222	100	0	0	0	100	100	0	234	100	100	100	0	0	0	0	19.5	234
113	1	2	0	0	0	0	0	0	0	0	100	100	100	0	0	0	1000	0	19.5	234
114	1	1	0	100	1000	100	100	100	100	100	100	100	100	100	100	100	100	100	19.5	234
115	1	2	1000	100	0	100	100	100	100	100	1000	174	100	100	100	100	100	100	16.5	198
116	1	1	1000	174	100	1000	0	0	0	0	1000	174	100	1000	1000	0	0	0	14.5	174
117	1	1	1000	0	0	0	0	0	0	0	1000	150	100	0	0	0	100	100	12.5	150
118	1	1	1000	100	100	100	100	100	1000	100	1000	100	114	100	100	100	100	100	16.5	198
119	1	2	1000	100	100	0	0	0	0	0	1000	100	100	0	0	0	0	0	16.5	198
120	1	2	1000	100	100	100	0	0	1000	0	1000	100	100	1000	0	0	0	0	16.5	198
121	1	1	1000	162	1000	0	0	0	0	0	222	100	114	0	0	100	100	100	18.5	222
122	1	1	150	150	1000	100	100	100	126	100	162	126	102	114	0	100	100	100	13.5	162
123	1	1	1000	150	0	0	0	0	0	0	150	150	100	150	138	150	0	0	12.5	150
124	1	2	198	100	100	0	0	0	0	0	174	174	100	100	100	0	100	100	16.5	198
125	1	2	198	100	100	100	0	0	0	0	174	174	100	100	100	0	100	100	16.5	198
126	1	2	0	0	1000	100	0	0	100	100	222	174	114	100	100	100	100	100	18.5	222
127	1	1	150	1000	1000	1000	1000	1000	1000	1000	162	100	1000	1000	1000	1000	1000	1000	15.5	186
128	1	1	150	1000	1000	1000	1000	1000	1000	1000	162	100	1000	1000	1000	1000	1000	1000	15.5	186
129	1	1	150	138	100	0	0	0	0	0	102	126	100	150	138	138	0	0	12.5	150
130	1	1	246	100	100	100	100	100	100	100	234	100	0	0	0	0	100	100	20.5	246
131	1	2	138	138	0	0	0	0	0	0	126	138	114	0	0	0	0	0	12.5	150
132	1	2	1000	1000	0	0	0	0	0	0	1000	174	100	138	138	0	100	100	13.5	162
133	1	2	1000	1000	100	138	0	138	0	0	1000	138	100	126	126	126	100	100	11.5	138
134	1	2	1000	150	100	0	0	100	100	100	1000	138	100	150	100	100	100	1000	13.5	162
135	1	1	1000	0	90	102	102	114	102	102	1000	102	102	114	102	0	90	102	8.5	102
136	1	1	138	138	0	0	0	114	102	0	1000	126	114	126	126	114	0	0	10.5	126
137	1	1	150	174	100	100	100	0	100	0	162	150	100	150	100	0	100	100	13.5	162
138	1	1	174	0	100	0	0	0	0	0	174	150	114	1000	0	150	1000	0	13.5	162
139	1	1	138	174	0	0	0	0	0	0	174	150	100	162	100	150	0	0	12.5	150
140	1	2	1000	138	100	0	0	138	0	0	150	174	100	100	100	100	100	100	13.5	162
141	1	2	1000	100	100	100	0	100	100	100	162	100	100	100	100	0	0	100	16.5	198
142	1	1	198	0	100	0	0	100	0	0	210	174	100	0	0	0	100	100	17.5	210
143	1	1	150	0	1000	0	0	0	0	0	174	150	100	0	0	0	0	0	13.5	162
144	1	2	138	138	100	138	0	100	126	100	126	150	100	1000	1000	138	100	100	12.5	150
145	1	1	102	102	102	0	0	0	0	0	114	114	102	90	90	90	90	90	8.5	102
146	1	1	150	0	0	0	0	0	0	0	114	126	0	114	114	0	0	0	11.5	138
147	1	2	138	138	100	0	0	138	0	0	150	138	114	150	138	126	117	100	11.5	138
148	1	2	150	138	100	150	138	138	0	0	150	138	114	150	150	150	100	100	12.5	150
149	1	1	1000	90	0	78	0	0	0	90	1000	90	78	90	78	78	90	90	7.5	90
150	1	1	1000	102	90	102	102	114	102	102	1000	102	102	114	102	102	90	102	8.5	102

Appendix 6 – *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Right Side.

151	1	1	1000	90	90	90	78	66	78	90	1000	90	90	90	90	90	0	0	7.5	90
152	1	1	1000	150	100	0	0	126	0	100	150	150	100	138	126	114	100	100	11.5	138
153	1	1	1000	102	90	102	102	90	102	90	1000	102	90	102	90	90	102	0	8.5	102
154	1	1	1000	90	78	102	90	78	90	90	1000	102	78	90	90	78	90	0	7.5	90
155	1	1	114	150	100	1000	150	100	100	0	1000	102	100	138	138	138	0	0	11.5	138
156	1	2	1000	90	78	90	78	66	0	0	1000	102	90	90	90	114	0	0	7.5	90
157	1	2	150	0	0	0	0	0	0	100	174	102	0	126	0	0	0	0	14.5	174
158	1	2	1000	138	100	0	0	126	0	126	1000	102	1000	150	138	0	100	100	11.5	138
159	1	1	150	150	1000	1000	138	100	100	0	150	102	1000	150	138	126	100	100	12.5	150
160	1	2	150	126	102	0	0	0	126	0	1000	102	102	90	114	126	90	0	10.5	126
161	1	2	1000	78	0	0	0	0	0	0	1000	102	78	78	0	78	78	0	6.5	78
162	1	1	1000	90	66	66	66	66	66	54	1000	102	66	66	66	66	78	66	5.5	66
163	1	1	1000	102	0	0	0	0	0	0	1000	102	0	0	0	0	0	0	8.5	102

Appendix 7 - *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Left Side.

SPSS	Institution	Gender	28	27	26	25	24	23	22	21	38	37	36	35	34	33	32	31	Left	Months
1	2	2	1000	0	0	0	0	0	0	0	198	100	100	150	100	0	0	0	16.5	198
2	2	2	138	150	100	0	0	0	0	0	162	150	100	0	0	150	0	0	12.5	150
3	2	2	198	0	100	1000	0	0	0	0	1000	0	126	1000	126	114	100	0	11.5	138
4	2	2	138	126	102	1000	114	114	114	102	1000	102	114	1000	102	114	0	0	10.5	126
5	2	1	246	100	0	0	0	0	0	0	198	100	100	100	100	100	100	100	18.5	222
6	2	1	174	174	100	0	0	100	100	100	162	100	100	1000	100	150	100	0	15.5	186
7	2	1	174	174	100	0	0	100	100	100	162	100	100	1000	100	150	100	0	15.5	186
8	2	1	1000	0	1000	0	0	0	0	0	1000	150	100	0	0	0	0	0	12.5	150
9	2	1	126	126	0	0	0	0	0	0	1000	126	114	114	126	114	0	0	10.5	126
10	2	1	150	174	100	150	162	100	100	100	162	150	100	150	138	138	102	102	12.5	150
11	2	1	1000	138	102	0	126	138	0	0	150	150	114	138	150	150	100	100	12.5	150
12	2	2	1000	100	100	1000	100	100	0	0	1000	100	100	1000	0	0	0	0	16.5	198
13	2	1	0	0	0	0	0	0	0	0	150	138	100	138	138	0	0	0	11.5	138
14	2	1	198	100	102	100	0	100	0	100	198	174	100	100	100	0	0	0	16.5	198
15	2	1	102	90	0	102	0	114	0	0	102	102	0	126	0	0	0	0	8.5	102
16	2	1	100	100	100	100	0	0	0	0	100	100	100	100	100	100	0	0	22.5	270
17	2	1	198	100	100	0	0	100	100	100	198	100	100	100	100	0	1000	100	16.5	198
18	2	1	162	138	0	0	126	126	0	0	150	138	100	126	138	126	100	100	11.5	138
19	2	1	1000	0	0	0	0	0	0	0	1000	0	100	0	0	0	0	0	14.5	174
20	2	2	162	0	0	0	0	0	0	0	162	0	0	0	0	0	0	0	13.5	162
21	2	1	150	150	100	150	162	100	100	100	150	150	1000	150	100	100	100	100	12.5	150
22	2	1	1000	102	90	102	102	114	102	102	1000	102	114	114	102	114	102	102	8.5	102
23	2	2	0	0	0	100	0	0	0	0	100	100	100	100	0	0	0	0	19.5	234
24	2	1	150	150	1000	162	150	100	100	100	150	150	1000	150	150	0	0	100	12.5	150
25	2	2	1000	100	1000	0	100	100	100	100	198	100	100	1000	100	100	100	100	16.5	198
26	2	2	150	126	102	150	0	138	0	100	150	102	114	150	150	0	0	0	12.5	150
27	2	2	174	0	100	1000	0	100	0	100	174	174	100	150	100	138	100	0	14.5	174
28	2	2	174	0	100	1000	0	100	0	100	174	174	100	150	100	138	100	0	14.5	174
29	2	2	1000	100	100	1000	162	100	100	100	210	100	100	100	1000	150	100	100	17.5	210
30	2	2	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	19.5	234
31	2	1	222	100	100	0	0	100	100	0	222	100	100	0	0	0	100	0	18.5	222
32	2	1	1000	162	100	100	0	0	0	0	150	174	100	100	0	0	0	0	12.5	150
33	2	2	1000	66	78	1000	102	90	0	0	0	90	90	1000	102	90	78	0	7.5	90
34	2	1	1000	66	42	0	0	0	54	66	1000	66	66	66	66	66	54	66	5.5	66
35	2	1	138	138	100	0	0	138	114	114	126	126	100	150	150	126	100	100	11.5	138
36	2	1	1000	1000	1000	150	138	0	0	1000	1000	100	1000	150	138	0	0	0	16.5	198
37	2	1	1000	1000	1000	100	100	100	126	100	1000	100	100	162	100	150	100	100	16.5	198
38	2	1	246	100	100	100	100	100	100	126	100	186	0	100	100	100	100	100	20.5	246
39	2	1	150	126	0	0	0	138	0	0	162	150	100	126	138	138	114	100	13.5	162
40	2	2	1000	100	100	100	162	100	1000	126	1000	100	1000	100	100	100	100	100	16.5	198
41	2	1	1000	0	0	0	0	0	0	0	1000	126	0	126	0	0	0	0	10.5	126
42	2	1	126	102	0	114	0	114	0	0	150	126	114	126	114	114	0	0	11.5	138
43	2	2	150	162	100	0	0	0	0	126	150	162	114	150	100	150	100	100	12.5	150
44	2	1	222	100	100	0	0	0	100	100	222	100	100	150	0	0	100	100	18.5	222
45	2	1	138	126	100	126	126	114	0	114	138	126	100	126	126	114	100	100	11.5	138
46	2	2	150	162	100	100	162	0	100	100	162	150	114	150	150	150	100	100	13.5	162
47	2	2	126	114	0	0	126	1000	0	0	138	114	114	126	126	126	100	100	10.5	126
48	2	2	150	126	102	126	138	138	114	114	138	138	114	114	126	126	0	0	11.5	138
49	2	2	138	126	0	0	0	0	0	0	150	138	114	138	126	126	0	0	11.5	138
50	2	2	138	126	100	126	138	100	114	126	138	138	100	138	100	126	100	100	11.5	138

Appendix 7 - *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Left Side.

51	2	2	222	100	100	100	100	100	100	100	100	100	1000	100	100	100	0	0	19.5	234
52	2	1	1000	90	66	78	78	66	66	66	1000	90	66	78	78	66	66	66	6.5	78
53	2	2	234	0	0	0	0	0	0	0	100	100	1000	0	0	0	0	0	19.5	234
54	2	2	114	102	100	114	114	126	0	90	114	114	100	126	114	114	100	100	9.5	114
55	2	2	0	0	0	0	0	0	0	0	100	100	100	100	100	150	100	100	19.5	234
56	2	1	1000	0	0	0	0	0	0	0	1000	78	78	66	66	66	54	54	5.5	66
57	2	1	0	0	0	0	0	0	0	0	1000	174	100	150	0	0	0	0	14.5	174
58	2	1	1000	0	0	0	0	0	0	0	1000	100	100	100	100	100	0	0	16.5	198
59	2	2	198	100	1000	0	0	0	0	0	198	100	100	100	100	100	100	100	16.5	198
60	2	1	1000	102	100	102	114	114	102	102	1000	114	90	114	102	114	102	102	8.5	102
61	2	2	1000	150	100	150	138	100	126	126	1000	150	100	150	150	138	100	100	12.5	150
62	2	1	1000	0	0	0	0	0	0	0	1000	54	42	0	0	0	0	0	4.5	54
63	2	1	234	100	100	100	100	100	0	0	1000	100	100	100	100	100	100	100	19.5	234
64	2	1	150	150	100	126	138	138	114	126	162	150	100	150	138	0	0	0	12.5	150
65	2	1	1000	150	100	138	138	1000	1000	0	1000	138	100	126	1000	126	0	100	11.5	138
66	2	1	246	100	100	100	100	0	0	0	100	100	1000	100	100	100	0	0	20.5	246
67	2	2	186	100	100	100	100	100	100	100	210	1000	100	100	100	100	100	100	16.5	198
68	2	2	186	100	100	100	100	100	100	100	210	1000	100	100	100	100	100	100	16.5	198
69	2	2	222	100	100	0	0	0	100	100	198	100	100	100	100	0	0	0	18.5	222
70	2	1	114	102	0	0	0	0	0	0	102	102	90	114	102	114	102	102	8.5	102
71	2	2	234	100	100	0	0	100	1000	100	100	100	100	1000	0	0	0	0	19.5	234
72	2	2	0	0	0	0	0	0	0	0	1000	0	0	0	0	54	66	66	5.5	66
73	2	1	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	0	19.5	234
74	2	2	234	100	0	100	0	0	0	1000	222	100	1000	150	100	100	0	0	19.5	234
75	2	2	234	1000	1000	0	0	0	0	100	1000	100	100	100	0	0	100	100	19.5	234
76	2	1	162	100	100	0	0	0	0	100	1000	186	100	100	0	0	100	100	14.5	174
77	2	1	1000	0	0	0	0	0	0	0	162	0	100	162	100	0	0	0	13.5	162
78	2	1	222	100	1000	100	100	100	100	0	1000	100	1000	150	100	100	100	0	18.5	222
79	2	1	222	174	0	150	150	0	0	0	234	100	100	100	100	0	0	100	18.5	222
80	2	1	222	100	100	162	0	138	100	0	1000	100	100	1000	100	100	0	100	18.5	222
81	2	2	1000	100	100	100	100	100	100	100	150	0	0	100	100	100	100	1000	13.5	162
82	2	2	1000	114	100	114	102	126	102	0	1000	114	100	114	114	114	102	102	9.5	114
83	2	2	1000	102	90	102	90	90	90	90	1000	90	90	90	90	90	90	90	7.5	90
84	2	2	1000	90	78	90	78	78	78	78	1000	90	90	90	78	90	78	90	6.5	78
85	2	2	246	100	100	0	0	0	100	100	234	100	100	150	0	0	0	0	20.5	246
86	2	2	1000	90	78	90	78	78	90	90	1000	90	90	90	90	114	90	90	7.5	90
87	2	2	150	174	0	1000	162	100	100	100	162	174	100	1000	0	100	100	100	13.5	162
88	2	2	150	150	100	150	138	100	126	102	138	150	100	150	100	138	100	100	12.5	150
89	2	2	1000	186	0	0	150	100	0	100	1000	174	100	150	100	0	0	100	15.5	186
90	2	2	1000	102	0	0	0	114	0	0	1000	102	114	114	126	114	0	0	8.5	102
91	2	2	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	0	11.5	138
92	2	2	150	138	102	138	150	100	1000	126	162	138	100	150	100	138	100	100	12.5	150
93	2	2	138	138	102	126	0	126	1000	126	138	114	102	126	126	126	114	100	11.5	138
94	2	2	102	102	90	102	90	114	1000	102	102	114	90	114	102	102	0	90	8.5	102
95	2	2	0	0	0	0	0	0	0	0	210	174	100	1000	0	0	0	0	17.5	210
96	2	2	150	0	0	0	0	0	0	0	150	126	100	162	100	0	0	0	12.5	150
97	2	2	1000	174	1000	100	100	100	100	100	1000	174	100	100	100	100	100	100	14.5	174
98	2	1	1000	90	78	90	78	66	78	78	1000	90	78	66	78	66	78	78	6.5	78
99	2	1	138	102	102	114	114	114	102	114	138	102	114	114	126	114	102	100	10.5	126
100	2	2	174	174	100	0	0	0	100	100	174	174	100	150	150	0	0	0	14.5	174

Appendix 7 - *Microsoft Excel*® sheet with sample number, gender; institution and all data collected following the application of the Atlas of AlQahtani. Left Side.

101	**2**	**1**	198	100	100	100	1000	100	100	100	198	174	100	100	100	100	100	100	16.5	198
102	**2**	**1**	174	174	100	0	0	138	100	100	174	174	100	162	100	150	100	100	14.5	174
103	**2**	**1**	246	100	100	100	100	100	0	0	100	0	0	100	100	100	100	100	20.5	246
104	**2**	**2**	1000	0	0	0	1000	100	100	100	1000	0	0	100	100	162	100	100	16.5	198
105	**2**	**2**	162	150	100	150	138	100	100	126	150	150	100	150	138	150	0	0	12.5	150
106	**2**	**1**	234	0	100	100	100	100	0	0	222	100	100	100	100	100	100	100	18.5	222
107	**2**	**2**	0	0	0	0	0	100	100	0	174	186	1000	1000	1000	0	1000	1000	15.5	186
108	**2**	**1**	102	102	102	102	102	114	102	102	102	114	114	126	114	114	0	102	8.5	102
109	**2**	**1**	150	0	1000	0	0	0	100	0	174	174	1000	100	100	100	100	100	14.5	174
110	**2**	**1**	1000	1000	0	0	0	0	0	0	198	0	0	0	0	0	100	100	16.5	198
111	**2**	**1**	234	100	100	100	0	100	0	0	100	100	100	162	100	0	0	0	20.5	246
112	**2**	**1**	234	100	100	0	0	0	0	0	222	100	100	100	100	150	0	0	19.5	234
113	1	2	0	0	0	0	0	0	0	0	222	100	100	100	0	0	1000	0	18.5	222
114	1	1	234	1000	100	100	100	100	1000	100	100	100	100	1000	100	100	100	100	19.5	234
115	1	2	1000	100	0	0	0	0	0	100	1000	174	1000	100	100	100	100	100	16.5	198
116	1	1	1000	174	100	1000	100	100	100	100	1000	174	100	1000	100	100	100	0	14.5	174
117	1	1	1000	0	0	150	162	100	100	0	1000	0	100	0	0	0	0	100	12.5	150
118	1	1	1000	100	100	0	0	100	0	100	1000	100	100	100	100	100	100	100	16.5	198
119	1	2	210	0	0	0	0	0	0	0	1000	100	100	100	100	0	0	0	17.5	210
120	1	2	234	1000	0	0	100	1000	1000	0	100	100	0	1000	100	0	0	0	19.5	234
121	1	1	1000	162	100	100	100	100	100	114	198	126	90	114	150	100	100	100	16.5	198
122	1	1	1000	162	1000	150	0	0	0	0	162	150	114	162	100	150	1000	100	13.5	162
123	1	1	150	150	100	0	0	0	100	100	150	126	0	114	138	150	1000	100	12.5	150
124	1	2	198	100	100	100	0	0	0	0	1000	100	100	100	100	0	0	0	16.5	198
125	1	2	198	100	100	100	100	0	0	0	1000	100	1000	100	100	0	100	100	16.5	198
126	1	2	222	100	100	100	100	100	0	126	100	100	100	100	0	0	100	100	19.5	234
127	1	1	150	100	1000	1000	1000	1000	1000	1000	174	100	1000	1000	1000	1000	1000	1000	15.5	186
128	1	1	150	100	1000	1000	1000	1000	1000	1000	174	100	1000	1000	1000	1000	1000	1000	15.5	186
129	1	1	126	138	0	150	0	0	0	0	162	138	100	150	0	0	0	0	12.5	150
130	1	1	246	1000	1000	100	0	0	100	100	100	100	1000	0	100	100	100	100	20.5	246
131	1	2	138	0	0	0	0	0	0	0	114	138	114	150	138	126	0	0	12.5	150
132	1	2	1000	0	0	138	0	0	0	0	1000	174	100	1000	100	162	100	100	14.5	174
133	1	2	1000	138	100	138	138	138	0	0	1000	138	100	1000	138	138	100	100	11.5	138
134	1	2	1000	150	100	0	100	100	100	100	1000	150	114	150	100	100	100	1000	13.5	162
135	1	1	1000	102	102	102	0	114	102	102	102	102	102	126	102	114	90	90	8.5	102
136	1	1	114	102	0	0	0	0	0	0	114	114	114	102	0	0	0	0	9.5	114
137	1	1	150	150	100	150	162	0	0	0	162	150	100	150	150	0	0	0	13.5	162
138	1	1	174	0	0	138	0	100	0	100	174	174	100	1000	100	150	1000	100	13.5	162
139	1	1	174	150	100	0	0	0	0	0	174	150	100	150	100	0	0	0	13.5	162
140	1	2	1000	150	100	100	100	100	0	0	1000	174	100	100	100	100	100	100	13.5	162
141	1	2	1000	100	100	100	0	100	100	100	1000	100	100	100	100	100	100	100	16.5	198
142	1	1	198	0	100	0	0	0	0	0	210	100	100	0	0	0	0	0	17.5	210
143	1	1	150	150	1000	0	0	0	0	0	150	150	100	150	100	138	0	0	12.5	150
144	1	2	138	138	100	150	138	138	100	100	102	150	100	1000	138	150	100	100	12.5	150
145	1	1	102	102	0	0	0	0	0	0	102	102	90	102	0	0	0	0	8.5	102
146	1	1	138	126	0	126	126	114	90	90	150	138	114	126	114	114	0	0	11.5	138
147	1	2	138	126	0	0	0	100	126	114	150	138	100	126	138	126	100	100	11.5	138
148	1	2	150	138	0	0	0	100	126	114	150	150	100	138	150	150	100	100	12.5	150
149	1	1	1000	90	0	102	90	0	0	90	1000	90	90	90	90	90	78	90	7.5	90
150	1	1	1000	102	102	114	114	114	102	102	1000	102	102	114	102	114	90	102	8.5	102

Appendix 7 - *Microsoft Excel*® sheet with sample number, gender, institution and all data collected following the application of the Atlas of AlQahtani. Left Side.

151	1	1	1000	90	90	90	78	90	78	90	1000	90	78	90	78	0	0	0	7.5	90
152	1	1	1000	138	100	138	0	138	114	100	150	150	100	138	126	114	102	100	11.5	138
153	1	1	1000	102	90	102	102	90	102	90	1000	102	90	102	102	114	102	102	8.5	102
154	1	1	1000	102	78	78	78	78	78	90	1000	90	78	90	90	78	90	90	7.5	90
155	1	1	138	150	100	1000	0	100	100	0	150	138	100	138	138	0	0	0	11.5	138
156	1	2	1000	90	0	0	0	0	0	0	1000	90	90	90	90	78	0	0	7.5	90
157	1	2	174	0	0	0	0	0	0	0	174	174	100	0	0	0	0	0	14.5	174
158	1	2	1000	126	100	126	0	0	100	126	1000	138	90	138	126	126	114	100	11.5	138
159	1	1	150	0	1000	0	0	100	0	0	150	150	114	150	138	0	0	100	12.5	150
160	1	2	0	0	0	0	138	0	0	0	1000	126	0	1000	126	114	0	0	10.5	126
161	1	2	1000	90	78	78	0	0	0	0	1000	90	90	90	90	90	78	0	7.5	90
162	1	1	1000	90	78	66	66	66	66	66	1000	90	78	66	78	66	78	66	5.5	66
163	1	1	1000	102	0	0	0	0	0	0	1000	102	90	0	0	0	0	0	7.5	90

Appendix 8 – *Microsoft Excel*® sheet with 10% of the sample - Calibration List

1) Right side.

1º aval.																				
SPSS	Institution	Gender	18	17	16	15	14	13	12	11	48	47	46	45	44	43	42	41	Right	Months
1	2	2	222	174	100	0	0	100	138	138	198	100	114	100	100	174	0	0	16.5	198
2	2	2	150	210	100	0	0	0	0	0	1000	150	114	0	138	150	0	0	12.5	138
3	2	2	198	100	100	138	138	114	0	0	1000	100	114	1000	126	114	0	0	10.5	126
4	2	2	138	126	100	102	114	114	102	102	1000	114	114	1000	126	114	0	102	10.5	126
5	2	1	246	100	100	100	0	0	0	0	100	100	100	100	100	0	100	100	19.5	234
6	2	1	186	1000	100	0	138	100	1000	0	198	174	1000	1000	0	150	100	0	16.5	198
7	2	1	186	100	100	0	138	100	1000	0	198	174	1000	1000	0	150	100	0	16.5	198
8	2	1	150	150	100	150	0	150	0	126	174	150	1000	150	150	126	100	100	13.5	162
9	2	2	1000	0	0	0	162	1000	0	126	1000	174	100	0	0	0	1000	100	16.5	198
10	2	1	0	0	0	0	0	0	0	0	138	126	114	0	0	0	0	0	11.5	138
11	2	1	1000	100	100	100	100	100	0	0	198	100	114	100	100	100	100	100	16.5	198
12	2	1	0	0	0	0	0	114	0	0	1000	102	100	126	126	0	0	0	10.5	126
13	2	1	234	100	100	150	138	100	100	0	100	100	100	162	138	126	1000	0	19.5	234
14	2	1	100	100	100	0	0	0	0	0	100	100	100	174	0	0	100	100	22.5	270
15	2	1	198	100	100	100	100	100	126	0	186	100	100	100	100	100	1000	100	16.5	198
16	2	1	150	150	0	0	0	0	0	0	150	138	100	126	138	114	100	100	11.5	138
17	2	1	162	0	0	0	0	0	0	0	1000	0	100	100	100	100	0	0	14.5	174
2º aval.																				
SPSS	Institution	Gender	18	17	16	15	14	13	12	11	48	47	46	45	44	43	42	41	Right	Monts
1	2	2	222	186	100	0	0	100	0	0	198	100	100	100	100	0	0	0	17.5	210
2	2	2	150	150	100	0	0	0	0	0	150	150	100	0	0	138	0	0	13.5	162
3	2	2	198	174	100	0	0	0	0	0	1000	174	114	1000	126	114	0	0	11.5	138
4	2	2	138	126	100	114	114	126	102	126	1000	114	114	1000	126	114	0	0	9.5	114
5	2	1	246	100	100	100	0	0	0	0	100	100	100	100	100	0	100	100	19.5	234
6	2	1	198	1000	100	0	0	100	1000	100	198	0	1000	1000	100	150	100	0	16.5	198
7	2	1	198	100	100	0	0	100	1000	100	198	0	1000	1000	100	150	100	0	16.5	198
8	2	1	150	150	100	150	0	100	0	0	162	150	1000	150	138	138	100	100	12.5	150
13	2	1	100	100	100	100	100	100	100	126	100	100	100	162	0	0	1000	0	22.5	270
9	2	2	1000	0	0	0	100	1000	0	100	1000	0	100	0	0	0	1000	100	14.5	174
10	2	1	0	0	0	0	0	0	0	0	138	138	114	0	0	0	0	0	11.5	138
11	2	1	1000	100	100	100	100	100	100	100	198	174	100	100	100	100	100	100	16.5	198
12	2	1	0	0	0	0	0	114	0	0	1000	102	100	126	126	0	0	0	10.5	126
14	2	1	100	100	100	0	0	0	0	0	100	100	100	174	0	0	100	100	22.5	270
15	2	1	198	100	100	100	100	100	126	0	186	100	100	100	100	100	1000	100	16.5	198
16	2	1	150	150	0	0	0	0	0	0	150	138	100	126	138	126	0	100	11.5	138
17	2	1	150	0	0	0	0	0	0	0	1000	0	100	100	100	100	0	0	14.5	174

2) Left Side

1º aval.																				
SPSS	Institution	Gender	28	27	26	25	24	23	22	21	38	37	36	35	34	33	32	31	Left	Months
1	2	2	1000	210	114	0	100	0	100	100	198	100	100	100	100	0	0	0	16.5	198
2	2	2	138	150	100	0	0	0	0	0	174	150	100	150	0	150	0	0	13.5	162
3	2	2	198	100	100	1000	138	0	0	0	1000	0	126	1000	138	114	0	0	11.5	138
4	2	2	138	126	100	1000	102	114	114	102	1000	102	126	1000	102	114	0	0	10.5	126
5	2	1	234	100	100	0	0	100	100	100	198	100	100	100	100	162	100	100	17.5	210
6	2	1	174	174	100	150	138	100	100	100	174	100	100	1000	150	150	100	0	15.5	186
7	2	1	174	174	100	150	138	100	100	100	174	100	100	1000	150	150	100	0	15.5	186
8	2	1	162	174	100	162	100	100	100	100	174	150	100	138	150	126	102	102	14.5	174
9	2	2	1000	174	102	1000	162	0	1000	100	1000	100	100	1000	150	0	0	0	16.5	198
10	2	1	0	0	0	0	0	0	0	0	162	150	114	150	138	0	0	0	12.5	150
11	2	1	198	100	100	100	0	100	0	0	186	100	100	100	100	0	0	0	16.5	198
12	2	1	1000	102	0	114	0	114	0	0	102	114	100	126	138	114	0	0	10.5	126
13	2	1	198	100	100	100	138	100	126	100	100	100	100	100	100	138	0	0	19.5	234
14	2	1	100	100	100	100	0	0	0	0	100	100	100	100	100	100	0	0	22.5	270
15	2	1	198	100	100	0	0	100	100	100	198	100	100	100	100	0	1000	100	16.5	198
16	2	1	162	138	0	0	126	126	0	0	150	138	100	126	138	126	100	100	11.5	138
17	2	1	1000	0	0	0	0	0	0	0	1000	0	100	0	0	0	0	0	14.5	174
2º aval.																				
SPSS	Institution	Gender	28	27	26	25	24	23	22	21	38	37	36	35	34	33	32	31	Left	Months
1	2	2	1000	0	0	0	0	0	0	0	198	100	100	150	100	0	0	0	16.5	198
2	2	2	138	150	100	0	0	0	0	0	162	150	100	0	0	150	0	0	12.5	150
3	2	2	198	0	100	1000	0	0	0	0	1000	0	126	1000	126	114	100	0	11.5	138
4	2	2	138	126	102	1000	114	114	114	102	1000	102	114	1000	102	114	0	0	10.5	126
5	2	1	246	100	0	0	0	0	0	0	198	100	100	100	100	100	100	100	18.5	222
6	2	1	174	174	100	0	0	100	100	100	162	100	100	1000	100	150	100	0	15.5	186
7	2	1	174	174	100	0	0	100	100	100	162	100	100	1000	100	150	100	0	15.5	186
8	2	1	150	174	100	150	162	100	100	100	162	150	100	150	138	138	102	102	12.5	150
13	2	1	234	100	100	100	0	100	0	0	100	100	100	162	100	0	0	0	20.5	246
9	2	2	1000	100	100	1000	100	100	0	0	1000	100	100	1000	0	0	0	0	16.5	198
10	2	1	0	0	0	0	0	0	0	0	150	138	100	138	138	0	0	0	11.5	138
11	2	1	198	100	102	100	0	100	0	100	198	174	100	100	100	0	0	0	16.5	198
12	2	1	1000	102	0	114	0	114	0	0	102	114	100	126	138	114	0	0	10.5	126
14	2	1	100	100	100	100	0	0	0	0	100	100	100	100	100	100	0	0	22.5	270
15	2	1	198	100	100	0	0	0	100	0	186	100	100	100	100	0	1000	100	15.5	186
16	2	1	150	138	0	0	126	126	0	0	138	138	100	126	138	126	100	100	11.5	138
17	2	1	1000	0	0	0	0	0	0	0	1000	0	100	0	0	0	0	0	14.5	174

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

1) Upper Right

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	18 M	18 L	17 M	17 L	16 M	16 L	15 M	15 L	14 M	14 L	13 M	13 L	12 M	12 L	11 M	11 L
1	2	2	211	198	210	222	222	186	186	114	100	0	0	0	0	0	100	138	0	138	0
2	2	2	123	174	162	162	150	150	150	100	100	126	0	0	0	0	0	0	0	0	0
3	2	2	138	138	138	198	198	174	174	114	100	126	0	126	0	114	0	126	0	126	0
4	2	2	205	138	114	150	138	138	126	114	100	102	114	126	114	126	126	114	102	126	126
5	2	1	237	282	234	270	246	210	100	100	100	100	100	100	0	100	0	100	0	100	0
6	2	1	258	210	198	210	198	198	1000	126	100	174	0	0	0	0	100	138	1000	138	100
7	2	1	244	210	198	210	198	198	100	126	100	174	0	0	0	0	100	138	1000	138	100
8	2	1	204	138	150	1000	1000	150	0	0	1000	0	0	0	0	0	0	0	0	0	0
9	2	1	126	126	126	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2	1	155	174	150	162	150	162	150	126	100	162	150	0	0	174	100	138	0	138	0
11	2	1	168	138	138	1000	1000	0	138	102	102	126	126	126	126	126	126	138	100	126	126
12	2	2	237	210	174	210	1000	100	0	100	0	100	0	100	100	100	1000	1000	0	100	100
13	2	1	144	126	138	138	0	138	0	114	0	0	0	0	0	0	0	0	0	0	0
14	2	1	215	198	198	1000	1000	186	100	114	100	174	100	174	100	186	100	138	100	138	100
15	2	1	128	114	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	2	1	270	258	270	270	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0
17	2	1	198	198	198	198	198	198	100	114	100	174	100	174	100	186	100	138	126	138	0
18	2	1	146	138	138	150	150	162	150	114	0	126	0	126	0	114	0	0	0	126	0
19	2	1	245	186	174	186	162	198	0	100	0	174	0	162	0	174	0	0	0	0	0
20	2	2	157	150	150	150	150	0	126	0	0	0	0	0	0	0	0	0	0	0	0
21	2	1	268	150	150	150	150	138	150	114	100	150	100	150	0	150	100	138	100	126	100
22	2	1	225	114	102	1000	1000	114	102	114	90	102	102	1000	102	114	114	114	102	126	102
23	2	2	258	222	246	246	234	198	0	100	0	100	0	100	0	186	0	100	0	100	0
24	2	1	141	174	150	174	150	162	90	1000	1000	1000	1000	174	138	174	100	174	100	0	126
25	2	2	261	0	198	0	1000	0	100	0	1000	0	1000	0	0	0	100	0	0	0	100
26	2	2	163	162	150	174	150	174	126	114	90	162	150	162	138	102	138	0	0	0	0
27	2	2	179	198	174	186	174	186	0	114	102	0	0	0	0	0	0	0	0	138	0
28	2	2	107	198	174	186	174	186	0	114	102	0	0	0	0	0	0	0	0	138	0
29	2	2	210	0	198	0	1000	0	100	0	100	0	100	0	1000	0	100	0	100	0	100
30	2	2	248	198	234	198	222	100	100	100	100	100	0	100	0	100	0	100	0	100	0
31	2	1	217	222	222	100	234	100	100	100	100	100	0	100	0	100	100	100	126	100	0
32	2	1	200	174	174	1000	1000	0	0	0	0	0	100	0	100	0	100	0	0	0	0
33	2	2	82	78	102	1000	1000	0	102	0	0	0	0	0	0	0	0	0	0	0	0
34	2	1	74	54	66	1000	1000	42	66	54	54	0	0	0	0	54	54	54	66	54	66
35	2	1	122	0	138	0	138	0	138	0	102	0	0	0	126	0	126	0	0	0	0
36	2	1	273	198	210	1000	1000	1000	1000	100	100	174	100	174	100	0	0	0	0	100	126
37	2	1		210	186	1000	1000	1000	0	100	100	100	0	100	0	0	100	0	126	100	100
38	2	1	271	258	246	258	246	100	100	100	100	100	100	100	100	100	100	100	126	100	126
39	2	1	133	150	162	150	150	114	126	126	100	0	126	0	0	0	0	0	0	0	114
40	2	2	231	198	198	1000	1000	198	100	100	100	100	0	0	0	0	0	1000	1000	100	126
41	2	1	124	126	126	1000	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	2	1	118	114	150	114	150	114	126	114	100	102	102	102	102	114	114	114	114	126	126
43	2	2	126	174	150	162	150	174	174	114	100	174	100	174	100	186	100	138	100	138	100
44	2	1	226	210	198	210	198	100	100	114	100	174	0	174	0	186	0	138	0	138	0
45	2	1	129	114	114	114	138	126	126	114	100	126	0	126	0	102	0	114	102	114	102
46	2	2	133	150	162	150	150	150	150	114	100	174	100	174	100	0	0	126	100	126	100
47	2	2	113	126	126	126	138	126	126	126	0	0	126	126	126	0	0	114	0	114	0
48	2	2	112	138	138	150	150	138	126	114	100	126	126	138	138	138	0	126	126	138	114
49	2	2	136	150	138	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2	2	146	150	138	150	150	138	126	114	100	126	138	0	138	0	100	126	114	126	126

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	18 M	18 L	17 M	17 L	16 M	16 L	15 M	15 L	14 M	14 L	13 M	13 L	12 M	12 L	11 M	11 L
51	2	2	268	282	234	1000	222	100	100	100	1000	100	100	100	100	100	100	100	100	100	100
52	2	1	67	66	66	1000	1000	0	90	0	66	0	0	0	0	0	66	0	78	0	54
53	2	2	213	282	234	282	234	100	100	1000	1000	100	100	100	0	100	0	100	0	100	0
54	2	2	131	114	102	114	114	114	102	0	102	0	102	0	102	114	114	0	102	0	90
55	2	2	248	222	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	2	1	129	90	78	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	2	1	170	162	162	1000	0	174	0	114	0	0	0	0	0	0	0	0	0	0	0
58	2	1	208	174	198	1000	1000	1000	1000	114	0	162	0	162	0	174	0	138	0	126	0
59	2	2	223	198	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	2	1	101	114	114	1000	1000	102	102	114	100	114	102	114	102	0	0	102	0	114	0
61	2	2	161	162	150	1000	1000	150	126	114	100	162	150	162	100	174	100	138	126	138	126
62	2	1	57	0	54	0	1000	0	54	0	42	0	0	0	0	0	0	0	0	0	0
63	2	1	239	258	234	258	234	100	100	100	100	100	100	100	100	100	100	100	0	100	0
64	2	1	131	150	150	162	150	162	150	100	100	150	150	150	138	150	100	100	100	100	126
65	2	1	157	150	138	1000	1000	0	0	0	0	0	0	126	0	1000	1000	0	1000	100	0
66	2	1	214	234	246	234	246	100	100	100	100	100	100	100	100	100	100	100	0	100	0
67	2	2	193	198	198	198	198	100	100	100	100	100	100	100	100	100	100	100	126	100	100
68	2	2	191	198	198	198	198	100	100	100	100	100	100	100	100	100	100	100	126	100	100
69	2	2	193	210	222	222	222	100	100	100	0	100	0	100	0	100	0	100	100	100	100
70	2	1	130	114	102	1000	1000	102	102	0	0	0	0	0	0	0	0	0	0	0	0
71	2	2	255	282	234	282	234	100	100	100	100	1000	1000	100	0	100	0	100	1000	100	100
72	2	2	60	78	78	1000	1000	78	78	78	78	0	66	0	78	0	78	0	0	0	0
73	2	1	197	246	210	246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2	2	226	222	222	222	234	100	100	0	0	1000	0	0	0	0	0	100	0	0	0
75	2	2	218	246	246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	2	1	206	186	174	186	174	186	100	100	100	100	100	100	100	186	100	138	100	138	100
77	2	1	182	174	162	0	1000	0	0	0	0	0	0	0	0	0	0	1000	0	0	0
78	2	1	256	282	234	282	1000	1000	100	100	100	100	100	100	100	100	0	100	0	100	0
79	2	1	234	282	222	282	222	100	174	100	0	100	0	100	0	100	100	100	100	100	100
80	2	1	249	222	222	222	222	100	100	100	100	100	100	0	0	138	100	0	100	100	100
81	2	2	196	150	174	1000	1000	100	100	1000	1000	1000	100	174	1000	174	100	126	100	0	126
82	2	2	145	126	114	1000	1000	126	102	0	100	126	1000	0	126	0	0	0	102	0	102
83	2	2	115	90	90	1000	1000	90	90	90	102	102	1000	0	102	0	0	90	90	90	90
84	2	2	101	90	78	1000	1000	90	90	90	78	102	1000	0	90	0	78	90	78	90	78
85	2	2	259	234	246	234	246	100	0	100	100	100	100	100	100	100	0	100	0	100	100
86	2	2	93	90	90	1000	1000	90	90	0	90	102	90	102	90	102	90	0	90	0	90
87	2	2	158	174	162	174	150	174	174	100	102	0	1000	0	0	0	100	0	0	0	0
88	2	2	140	150	150	150	150	150	150	100	102	150	150	138	0	150	100	138	126	138	126
89	2	2	172	198	186	1000	1000	198	186	100	100	100	0	100	100	100	100	100	100	100	100
90	2	2	119	102	102	1000	1000	114	102	114	102	1000	126	126	126	114	126	0	0	0	126
91	2	2	209	0	138	0	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2	2	136	78	150	1000	150	78	138	78	102	0	150	0	0	0	100	0	0	102	126
93	2	2	116	138	126	138	114	138	114	100	102	0	0	0	0	126	126	0	0	0	102
94	2	2	99	114	102	1000	1000	114	102	114	90	0	0	0	90	114	114	90	78	0	90
95	2	2	248	222	222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	2	2	175	162	162	162	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	2	2	216	186	174	1000	1000	198	174	100	100	100	0	100	0	186	100	100	100	100	100
98	2	1	75	78	78	1000	1000	78	90	78	78	78	66	78	78	66	55	66	78	78	78
99	2	1	119	126	114	138	138	0	102	114	102	0	126	0	114	0	114	0	0	126	102
100	2	2	149	162	174	198	174	198	0	100	100	100	0	100	0	100	100	100	0	100	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	18 M	18 L	17 M	17 L	16 M	16 L	15 M	15 L	14 M	14 L	13 M	13 L	12 M	12 L	11 M	11 L
101	2	1	222	234	198	234	198	100	100	100	100	100	100	1000	1000	100	100	100	100	100	100
102	2	1	202	198	174	198	174	198	174	100	100	0	0	0	0	174	100	100	100	100	100
103	2	1	267	270	246	282	246	100	100	100	100	100	100	100	100	100	100	100	100	0	100
104	2	2	226	198	198	198	198	198	174	1000	1000	100	0	100	0	100	100	100	0	100	100
105	2	2	178	162	150	174	150	174	0	100	0	0	150	0	162	174	100	100	126	100	126
106	2	1	249	282	222	282	234	100	100	100	100	100	100	100	100	100	100	100	100	100	100
107	2	2	240	198	198	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	186	100	100	0	100	0
108	2	1	113	114	102	1000	102	114	102	114	102	126	114	114	114	114	114	0	102	126	114
109	2	1	190	198	162	186	150	198	150	1000	1000	100	150	100	0	100	100	100	0	100	126
110	2	1	260	198	198	1000	1000	100	100	100	100	0	0	0	0	0	100	0	0	0	0
111	2	1	246	282	270	282	100	100	100	100	100	100	100	100	100	100	100	100	100	100	126
112	2	1	232	234	234	234	222	100	100	100	0	100	0	100	0	100	100	100	100	100	0
113	1	2	282	282	234	282	0	100	0	100	0	100	0	1000	0	0	0	0	0	0	0
114	1	1	212	234	234	222	0	1000	100	1000	1000	100	100	162	100	100	100	100	100	100	100
115	1	2	248	162	198	1000	1000	0	100	0	0	162	100	100	100	150	100	100	100	100	100
116	1	1	161	222	174	222	1000	1000	174	1000	100	1000	1000	0	0	100	0	100	0	100	0
117	1	1	227	198	150	1000	1000	100	0	100	0	100	0	100	0	1000	0	0	0	100	0
118	1	1	275	210	198	1000	1000	100	100	100	100	100	100	0	100	100	100	1000	1000	100	100
119	1	2	222	210	198	1000	1000	100	100	100	100	100	0	0	0	0	0	0	0	0	0
120	1	2	214	198	198	1000	1000	100	100	100	100	0	100	162	0	0	0	1000	1000	0	0
121	1	1	232	174	222	1000	1000	1000	162	1000	1000	162	0	162	0	0	0	0	0	100	0
122	1	1	187	162	162	150	150	1000	150	1000	1000	162	100	0	100	174	100	1000	126	138	100
123	1	1	161	0	150	0	1000	0	150	0	0	0	0	162	0	0	0	0	0	0	0
124	1	2	228	174	198	174	198	100	100	100	100	162	0	162	0	174	0	1000	0	100	0
125	1	2	236	174	198	174	198	100	100	100	100	162	100	100	0	174	0	1000	0	100	0
126	1	2	206	234	222	0	0	1000	0	1000	1000	100	100	1000	0	114	0	100	100	100	100
127	1	1	203	174	186	174	150	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
128	1	1	195	174	186	174	150	1000	1000	1000	1000	1000	1000	0	1000	1000	1000	1000	1000	1000	1000
129	1	1	146	126	150	126	150	114	138	114	100	0	0	100	0	0	0	0	0	0	0
130	1	1	267	258	246	1000	246	100	100	100	100	100	100	0	100	100	100	100	100	100	100
131	1	2	140	126	150	126	138	0	138	0	0	0	0	0	0	0	0	0	0	0	0
132	1	2	179	174	162	1000	1000	0	1000	0	0	0	0	126	0	0	0	0	0	0	0
133	1	2	140	126	138	1000	1000	0	1000	0	100	126	138	162	0	114	138	0	0	126	0
134	1	2	184	162	162	1000	1000	100	150	100	100	162	0	102	0	162	100	100	100	100	100
135	1	1	122	102	102	1000	1000	0	0	0	90	102	102	0	102	114	114	114	102	114	102
136	1	1	142	126	126	126	138	0	138	0	0	0	0	0	0	0	114	0	102	0	0
137	1	1	177	150	162	150	150	100	174	100	100	162	100	162	100	0	0	138	100	138	0
138	1	1	156	174	162	174	174	0	0	0	100	150	0	0	0	0	0	100	0	100	0
139	1	1	165	186	150	174	138	100	174	100	0	0	0	0	0	0	0	100	0	100	0
140	1	2	148	162	162	1000	1000	0	138	0	100	0	0	100	0	162	138	0	0	0	0
141	1	2	177	174	198	1000	1000	0	100	0	100	100	100	100	0	100	100	0	100	100	100
142	1	1	177	222	210	210	198	100	0	100	100	100	0	0	0	100	100	100	0	100	0
143	1	1	156	162	162	162	150	0	0	0	1000	0	0	0	0	0	0	0	0	0	0
144	1	2	141	138	150	138	138	100	138	100	100	138	138	0	0	150	100	100	126	100	100
145	1	1	99	102	102	102	102	0	102	0	102	0	0	0	0	0	0	0	0	0	0
146	1	1	132	126	138	126	150	0	0	0	0	0	0	100	0	0	0	0	0	0	0
147	1	2	117	138	138	138	138	126	138	126	100	100	0	100	0	138	138	0	0	0	0
148	1	2	124	138	150	138	150	126	138	126	100	100	150	0	138	138	138	0	0	0	0
149	1	1	105	102	90	1000	1000	0	90	0	0	0	78	0	0	0	0	0	0	0	90
150	1	1	120	114	102	1000	1000	114	102	114	90	114	102	90	102	114	114	0	102	0	102

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	18 M	18 L	17 M	17 L	16 M	16 L	15 M	15 L	14 M	14 L	13 M	13 L	12 M	12 L	11 M	11 L
151	1	1	100	90	90	1000	1000	90	90	90	90	90	90	0	78	90	66	0	78	0	90
152	1	1	156	138	138	1000	1000	100	150	100	100	0	0	102	0	0	126	0	0	0	100
153	1	1	104	102	102	1000	1000	102	102	102	90	102	102	0	102	102	90	0	102	0	90
154	1	1	86	90	90	1000	1000	90	90	90	78	0	102	0	90	78	78	0	90	0	90
155	1	1	158	126	138	1000	114	126	150	126	100	138	1000	0	150	0	100	0	100	0	0
156	1	2	85	90	90	1000	1000	90	90	90	78	0	90	100	78	0	66	0	0	0	0
157	1	2	192	186	174	174	150	100	0	100	0	138	0	1000	0	0	0	0	0	0	100
158	1	2	130	126	138	1000	1000	126	138	126	100	114	0	150	0	126	126	0	0	100	126
159	1	1	139	150	150	150	150	1000	150	1000	1000	1000	1000	0	138	150	100	0	100	0	0
160	1	2	124	114	126	114	150	0	126	0	102	0	0	0	0	0	0	0	126	0	0
161	1	2	86	78	78	1000	1000	78	78	78	0	0	0	0	0	0	0	102	0	0	0
162	1	1	63	90	66	1000	1000	0	90	0	66	0	66	0	66	0	66	0	66	0	54
163	1	1	106	66	102	1000	1000	66	102	66	0	66	0	102	0	54	0	0	0	0	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

2) Lower right

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	48 M	48 L	47 M	47 L	46 M	46 L	45 M	45 L	44 M	44 L	43 M	43 L	42 M	42 L	41 M	41 L
1	2	2	211	198	210	198	198	198	100	126	100	162	100	162	100	0	0	0	0	0	0
2	2	2	123	174	162	174	150	162	150	126	100	0	0	0	0	0	138	0	0	0	0
3	2	2	138	138	138	1000	1000	174	174	126	114	0	1000	126	126	114	114	0	0	114	0
4	2	2	205	138	114	1000	1000	126	114	126	114	0	1000	126	126	114	114	0	0	0	0
5	2	1	237	282	234	270	100	100	100	100	100	100	100	100	100	100	0	100	100	100	100
6	2	1	258	210	198	198	198	198	0	0	1000	0	1000	0	100	174	150	138	100	138	0
7	2	1	244	210	198	198	198	198	0	0	1000	0	1000	0	100	174	150	138	100	138	0
8	2	1	204	138	150	1000	1000	150	150	114	114	0	1000	0	0	0	0	0	0	0	0
9	2	1	126	126	126	1000	1000	126	126	114	114	0	0	0	0	0	0	126	0	126	0
10	2	1	155	174	150	174	162	162	150	1000	1000	150	150	150	138	138	138	114	100	114	100
11	2	1	168	138	138	174	150	162	150	126	114	138	138	162	138	0	0	0	0	0	0
12	2	2	237	210	174	1000	1000	198	0	100	100	100	0	100	0	100	0	1000	1000	100	100
13	2	1	144	126	138	126	138	138	138	126	114	0	0	0	0	0	0	0	0	0	0
14	2	1	215	198	198	198	198	186	174	126	100	174	100	162	100	0	100	126	100	126	100
15	2	1	128	114	102	0	0	0	0	0	0	0	126	114	0	102	0	0	0	0	0
16	2	1	270	258	270	222	100	100	100	100	100	0	174	0	0	0	0	0	100	0	100
17	2	1	198	198	198	198	186	186	100	126	100	174	100	162	100	174	100	0	1000	0	100
18	2	1	146	138	138	150	150	138	138	126	100	126	126	138	138	114	114	0	100	0	100
19	2	1	245	186	174	1000	1000	198	0	100	100	162	100	162	100	174	100	0	0	0	0
20	2	2	157	150	150	150	150	0	150	0	100	0	0	0	0	0	0	0	0	0	0
21	2	1	268	150	150	1000	150	150	150	150	1000	162	162	150	150	138	138	126	0	126	0
22	2	1	225	114	102	1000	1000	114	114	114	114	114	114	126	102	114	114	0	0	0	102
23	2	2	258	222	246	222	0	198	100	100	100	100	100	100	100	100	100	100	0	100	0
24	2	1	141	174	150	174	150	174	90	1000	1000	162	150	162	150	0	0	126	100	126	0
25	2	2	261	0	198	0	1000	0	100	0	100	0	1000	0	100	0	0	0	100	0	100
26	2	2	163	162	150	174	150	162	150	126	100	150	150	150	150	0	100	126	0	114	0
27	2	2	179	198	174	198	174	186	174	0	100	0	0	0	0	0	0	0	0	0	0
28	2	2	107	198	174	198	174	186	174	0	100	0	0	0	0	0	0	0	0	0	0
29	2	2	210	0	198	1000	1000	0	100	0	100	0	150	0	1000	0	138	0	100	0	100
30	2	2	248	198	234	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100
31	2	1	217	222	222	234	222	100	100	100	100	100	100	100	0	100	0	100	0	100	0
32	2	1	200	174	174	1000	1000	174	174	100	100	174	100	174	100	0	100	0	100	0	0
33	2	2	82	78	102	1000	0	78	102	78	90	0	1000	0	0	0	0	0	0	0	0
34	2	1	74	54	66	1000	1000	42	66	54	54	54	54	54	42	54	54	54	54	54	54
35	2	1	122	0	138	0	138	0	138	0	1000	0	126	0	138	0	0	0	0	0	100
36	2	1	273	198	210	198	210	198	100	100	100	100	100	100	100	100	0	100	100	100	100
37	2	1		210	186	210	186	210	100	100	100	100	100	100	100	100	0	100	100	100	100
38	2	1	271	258	246	258	246	100	100	1000	1000	1000	1000	1000	1000	100	100	100	100	100	100
39	2	1	133	150	162	150	162	150	150	126	114	0	126	0	0	0	0	0	0	0	100
40	2	2	231	198	198	1000	1000	198	100	100	100	100	100	0	0	0	0	0	0	100	100
41	2	1	124	126	126	0	102	126	126	114	114	126	126	0	0	0	0	0	0	0	0
42	2	1	118	114	150	114	150	114	126	114	102	114	114	114	102	102	102	114	0	114	0
43	2	2	126	174	150	174	162	174	150	126	100	150	150	150	150	150	126	114	0	114	0
44	2	1	226	210	198	198	198	186	100	126	100	0	100	0	100	162	100	100	100	100	100
45	2	1	129	114	114	114	114	126	114	126	100	126	126	114	126	114	114	114	114	114	100
46	2	2	133	150	162	150	162	150	150	126	100	0	100	0	100	0	100	126	100	126	100
47	2	2	113	126	126	138	138	126	126	126	114	138	114	0	0	126	114	114	0	114	0
48	2	2	112	138	138	114	126	126	126	114	114	114	114	138	138	126	150	102	102	0	102
49	2	2	136	150	138	150	150	150	150	114	100	150	138	0	0	0	0	0	0	0	0
50	2	2	146	150	138	138	138	150	138	126	100	150	150	162	150	126	126	126	114	114	100

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	48 M	48 L	47 M	47 L	46 M	46 L	45 M	45 L	44 M	44 L	43 M	43 L	42 M	42 L	41 M	41 L
51	2	2	268	282	234	282	234	100	186	1000	1000	100	100	100	100	100	100	100	100	100	100
52	2	1	67	66	66	1000	1000	66	90	66	54	0	66	0	66	0	66	0	0	0	54
53	2	2	213	282	234	282	234	100	100	1000	1000	100	0	0	0	0	0	100	0	100	100
54	2	2	131	114	102	114	114	126	126	114	102	102	102	102	102	102	114	102	90	114	90
55	2	2	248	222	234	222	234	100	100	100	100	100	0	100	0	100	0	100	0	100	0
56	2	1	129	90	78	1000	1000	90	78	90	78	66	66	78	54	66	66	66	54	66	54
57	2	1	170	162	162	162	162	162	150	0	1000	0	0	0	0	0	0	0	0	0	0
58	2	1	208	174	198	1000	1000	162	100	126	100	162	0	0	0	0	0	0	0	0	0
59	2	2	223	198	210	198	210	186	100	1000	1000	0	0	0	0	0	0	0	0	0	0
60	2	1	101	114	114	1000	1000	114	114	114	114	102	102	114	102	114	102	0	0	0	0
61	2	2	161	162	150	1000	1000	162	150	126	100	150	126	150	150	150	150	126	102	114	100
62	2	1	57	0	54	0	1000	0	54	0	42	0	0	0	0	0	0	0	0	0	0
63	2	1	239	258	234	258	234	100	100	100	100	100	100	100	100	100	100	100	100	100	100
64	2	1	131	150	150	150	162	150	150	126	100	150	150	0	138	0	0	0	0	0	0
65	2	1	157	150	138	1000	1000	150	150	100	100	150	138	126	138	126	126	126	0	126	0
66	2	1	214	234	246	234	246	100	100	100	100	100	100	100	100	100	100	100	100	100	100
67	2	2	193	198	198	198	198	100	100	100	100	100	100	100	100	100	100	100	100	100	100
68	2	2	191	198	198	198	198	198	100	100	100	100	100	100	100	100	100	100	100	100	100
69	2	2	193	210	222	210	198	198	100	100	100	100	100	100	100	100	0	100	0	100	0
70	2	1	130	114	102	114	102	114	102	114	90	114	102	114	90	114	114	102	102	102	102
71	2	2	255	282	234	282	234	100	100	100	100	100	100	100	0	100	0	100	0	100	0
72	2	2	60	78	78	1000	1000	78	78	78	78	78	66	78	66	78	66	78	66	66	66
73	2	1	197	246	210	246	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2	2	226	222	222	222	210	100	100	1000	1000	100	150	0	0	0	0	0	0	0	0
75	2	2	218	246	246	246	1000	1000	0	1000	1000	1000	100	100	1000	0	0	0	100	0	100
76	2	1	206	186	174	1000	1000	174	100	100	100	162	100	150	100	150	150	0	100	0	100
77	2	1	182	174	162	162	162	162	0	100	114	162	162	162	100	0	0	0	0	0	0
78	2	1	256	282	234	282	234	100	100	1000	1000	0	150	0	100	100	0	100	0	100	0
79	2	1	234	282	222	282	222	100	100	100	100	100	100	100	100	100	150	100	100	100	100
80	2	1	249	222	222	1000	1000	100	100	100	100	1000	1000	0	0	138	0	100	0	100	100
81	2	2	196	150	174	150	162	174	100	1000	1000	174	100	162	100	174	100	1000	1000	1000	1000
82	2	2	145	126	114	1000	1000	126	114	126	114	1000	1000	126	114	114	114	102	102	102	102
83	2	2	115	90	90	1000	1000	90	102	102	90	1000	1000	102	90	114	90	90	90	90	90
84	2	2	101	90	78	1000	1000	90	90	102	78	1000	1000	102	78	114	78	90	78	90	90
85	2	2	259	234	246	234	234	100	100	1000	100	100	100	100	100	100	100	100	100	100	100
86	2	2	93	90	90	1000	1000	90	90	90	90	102	90	90	90	90	78	102	90	90	90
87	2	2	158	174	162	174	162	174	174	100	100	162	1000	0	100	0	150	0	0	0	0
88	2	2	140	150	150	150	150	150	150	100	100	150	150	162	100	0	150	100	114	100	100
89	2	2	172	198	186	1000	1000	198	174	100	100	138	138	100	100	100	150	100	114	100	100
90	2	2	119	102	102	1000	1000	102	102	114	114	102	102	114	126	114	114	0	102	0	90
91	2	2	209	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2	2	136	78	150	1000	150	78	126	78	114	1000	150	0	150	0	150	0	0	0	100
93	2	2	116	138	126	126	114	126	114	100	114	138	126	138	138	126	126	100	0	100	100
94	2	2	99	114	102	102	102	114	102	114	90	102	102	114	114	102	90	114	90	114	90
95	2	2	248	222	222	222	222	186	100	100	100	0	1000	0	100	0	100	0	0	0	0
96	2	2	175	162	162	162	162	150	138	126	100	162	150	0	0	138	0	0	0	0	0
97	2	2	216	186	174	1000	1000	198	174	100	100	100	100	100	100	100	100	100	0	100	100
98	2	1	75	78	78	1000	1000	78	90	78	78	78	66	78	78	66	66	0	78	78	78
99	2	1	119	126	114	126	126	126	102	114	114	114	114	114	102	102	102	126	0	114	0
100	2	2	149	162	174	174	174	162	150	100	100	162	150	100	100	0	0	0	0	0	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	48 M	48 L	47 M	47 L	46 M	46 L	45 M	45 L	44 M	44 L	43 M	43 L	42 M	42 L	41 M	41 L
101	2	1	222	234	198	234	198	100	100	100	100	100	100	100	100	100	100	100	100	100	100
102	2	1	202	198	174	198	174	198	174	100	100	174	100	100	100	100	100	100	100	100	100
103	2	1	267	270	246	270	234	100	100	1000	1000	1000	100	100	100	100	100	100	100	100	100
104	2	2	226	198	198	1000	1000	198	100	100	0	100	100	100	100	186	100	0	100	100	100
105	2	2	178	162	150	162	162	162	150	100	100	162	150	162	150	0	0	100	0	100	0
106	2	1	249	282	222	282	210	100	100	1000	1000	100	100	100	100	100	100	100	100	100	100
107	2	2	240	198	198	198	198	198	174	100	100	1000	1000	174	0	1000	1000	1000	1000	1000	1000
108	2	1	113	114	102	102	102	126	114	126	114	126	126	114	126	114	114	126	114	126	100
109	2	1	190	198	162	198	174	198	174	1000	1000	100	162	100	100	100	13.5	100	0	100	0
110	2	1	260	198	198	198	198	198	100	100	100	100	100	100	100	0	0	100	0	100	100
111	2	1	246	282	270	282	100	100	100	100	100	100	162	0	0	100	0	100	1000	100	0
112	2	1	232	234	234	234	234	100	100	100	100	100	100	100	0	100	0	100	0	100	0
113	1	2	282	282	234	282	100	100	100	100	100	0	0	0	0	0	0	0	1000	0	0
114	1	1	212	234	234	234	100	100	100	100	100	1000	100	100	100	100	100	100	100	100	100
115	1	2	248	162	198	1000	1000	162	174	0	100	174	100	162	100	100	100	100	100	100	100
116	1	1	161	222	174	222	1000	100	174	1000	100	1000	1000	1000	1000	0	0	100	0	100	0
117	1	1	227	198	150	1000	1000	198	150	100	100	100	0	100	0	0	0	0	100	100	100
118	1	1	275	210	198	1000	1000	210	100	100	114	100	100	100	100	100	100	100	100	100	100
119	1	2	222	210	198	1000	1000	210	100	100	100	100	0	100	0	0	0	0	0	0	0
120	1	2	214	198	198	1000	1000	198	100	100	100	1000	1000	0	0	0	0	100	0	100	0
121	1	1	232	174	222	222	222	198	100	114	114	0	0	0	0	162	100	100	100	100	100
122	1	1	187	162	162	162	162	126	126	114	102	114	114	0	0	0	100	126	100	126	100
123	1	1	161	0	150	0	150	0	150	0	100	0	150	0	138	0	150	0	0	0	0
124	1	2	228	174	198	174	174	174	174	100	100	174	100	174	100	162	0	100	100	100	100
125	1	2	236	174	198	174	174	174	174	100	100	174	100	174	100	162	0	100	100	100	100
126	1	2	206	234	222	234	222	100	174	100	114	174	100	1000	100	174	100	100	100	100	100
127	1	1	203	174	186	174	162	186	100	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
128	1	1	195	174	186	174	162	186	100	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
129	1	1	146	126	150	126	102	126	126	100	100	150	150	162	138	126	138	1000	0	1000	0
130	1	1	267	258	246	258	234	100	100	0	0	0	0	0	0	0	0	0	100	0	100
131	1	2	140	126	150	126	126	126	138	114	114	0	0	0	0	126	0	114	0	114	0
132	1	2	179	174	162	1000	1000	174	174	100	100	150	138	0	138	100	0	100	100	100	100
133	1	2	140	126	138	1000	1000	126	138	126	100	114	126	114	126	126	126	126	100	114	100
134	1	2	184	162	162	1000	1000	162	138	100	100	162	150	150	100	1000	100	100	100	100	1000
135	1	1	122	102	102	1000	1000	114	102	114	102	114	114	102	102	114	0	114	90	114	102
136	1	1	142	126	126	138	1000	126	126	126	114	0	126	0	126	0	114	0	0	0	0
137	1	1	177	150	162	162	162	150	150	100	100	150	150	162	100	0	0	126	100	126	100
138	1	1	156	174	162	174	174	174	150	100	114	1000	1000	0	0	162	150	1000	1000	100	0
139	1	1	165	186	150	186	174	186	150	100	100	162	162	174	100	174	150	0	0	0	0
140	1	2	148	162	162	162	150	174	174	100	100	174	100	174	100	174	100	100	100	100	100
141	1	2	177	174	198	186	162	186	100	100	100	100	100	100	100	0	0	0	0	0	100
142	1	1	177	222	210	222	210	100	174	100	100	100	0	100	0	100	0	100	100	0	100
143	1	1	156	162	162	174	174	162	150	100	100	0	0	0	0	0	0	0	0	0	0
144	1	2	141	138	150	138	126	162	150	100	100	1000	1000	1000	1000	150	138	100	100	100	100
145	1	1	99	102	102	102	114	102	114	102	102	0	90	0	90	0	90	0	90	0	90
146	1	1	132	126	138	126	114	126	126	0	0	0	114	0	114	0	0	0	0	0	0
147	1	2	117	138	138	138	150	138	138	126	114	138	150	126	138	138	126	126	117	126	100
148	1	2	124	138	150	138	150	138	138	126	114	138	150	126	150	138	150	126	100	126	100
149	1	1	105	102	90	1000	1000	102	90	102	78	0	90	0	78	90	78	0	90	0	90
150	1	1	120	114	102	1000	1000	114	102	114	102	114	114	114	102	114	102	114	90	114	102

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Right M	Age estimate Right L	48 M	48 L	47 M	47 L	46 M	46 L	45 M	45 L	44 M	44 L	43 M	43 L	42 M	42 L	41 M	41 L
151	1	1	100	90	90	1000	1000	90	90	102	90	102	90	102	90	0	90	0	0	0	0
152	1	1	156	138	138	150	150	150	150	100	100	138	138	126	126	114	114	0	100	0	100
153	1	1	104	102	102	1000	1000	102	102	102	90	102	102	102	90	102	90	0	102	102	0
154	1	1	86	90	90	1000	1000	78	90	90	78	78	90	78	90	78	78	0	90	0	0
155	1	1	158	126	138	1000	1000	126	138	126	100	138	138	126	138	126	138	100	0	100	0
156	1	2	85	90	90	1000	1000	90	90	90	90	102	90	90	90	90	114	0	0	0	0
157	1	2	192	186	174	186	174	186	0	100	0	0	126	0	0	100	0	0	0	0	0
158	1	2	130	126	138	1000	1000	138	150	1000	1000	0	150	0	138	0	0	0	100	0	100
159	1	1	139	150	150	150	150	150	150	1000	1000	150	150	138	138	138	126	100	100	100	100
160	1	2	124	114	126	1000	1000	114	126	0	102	0	90	0	114	0	126	0	90	0	0
161	1	2	86	78	78	1000	1000	126	90	0	78	90	78	102	0	0	78	0	78	0	0
162	1	1	63	90	66	1000	1000	90	90	90	66	0	66	0	66	0	66	0	78	0	66
163	1	1	106	66	102	0	1000	66	102	66	0	66	0	66	0	66	0	66	0	66	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

3) Upper Left

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	28 M	28 L	27 M	27 L	26 M	26 L	25 M	25 L	24 M	24 L	23 M	23 L	22 M	22 L	21 M	21 L
1	2	2	211	198	198	0	1000	0	0	0	0	174	0	0	198	0	0	138	0	138	0
2	2	2	123	174	150	150	138	150	150	100	100	0	0	0	174	0	0	0	0	0	0
3	2	2	138	138	138	198	198	198	0	114	100	0	1000	138	138	114	0	126	0	126	0
4	2	2	205	138	126	150	138	126	126	114	102	0	1000	126	138	126	114	126	114	126	102
5	2	1	237	270	222	282	246	100	100	100	0	100	0	100	282	100	0	100	0	100	0
6	2	1	258	198	186	186	174	198	174	126	100	0	0	0	210	126	100	138	100	138	100
7	2	1	244	198	186	186	174	198	174	126	100	0	0	0	210	126	100	138	100	138	100
8	2	1	204	0	150	0	1000	0	0	0	1000	0	0	0	138	0	0	0	0	0	0
9	2	1	126	126	126	0	126	0	126	0	0	0	0	0	126	0	0	0	0	0	0
10	2	1	155	174	150	162	150	186	174	126	100	162	150	162	174	174	100	138	100	138	100
11	2	1	168	138	150	1000	1000	0	138	114	102	126	0	138	138	138	138	0	0	0	0
12	2	2	237	210	198	210	1000	198	100	100	100	100	1000	100	210	100	100	1000	0	100	0
13	2	1	144	138	138	0	0	0	0	0	0	0	0	0	126	0	0	0	0	0	0
14	2	1	215	198	198	198	198	198	100	114	102	162	100	0	198	186	100	138	0	138	100
15	2	1	128	114	102	1000	102	114	90	102	0	114	102	126	114	114	114	0	0	0	0
16	2	1	270	258	270	270	100	100	100	100	100	0	100	0	258	0	0	0	0	0	0
17	2	1	198	210	198	210	198	198	100	114	100	174	0	0	198	0	100	138	100	138	100
18	2	1	146	150	138	174	162	138	138	114	0	126	0	126	138	138	126	0	0	126	0
19	2	1	245	0	174	0	1000	0	0	0	0	0	0	0	186	0	0	0	0	0	0
20	2	2	157	150	162	174	162	0	0	0	0	0	0	0	150	0	0	0	0	0	0
21	2	1	268	150	150	138	150	138	150	114	100	162	150	0	150	150	100	138	100	126	100
22	2	1	225	114	102	1000	1000	114	102	114	90	102	102	114	114	114	114	114	102	126	102
23	2	2	258	234	234	246	0	198	0	100	0	100	100	100	222	100	0	100	0	100	0
24	2	1	141	174	150	174	150	174	150	1000	1000	162	162	162	174	174	100	138	100	138	100
25	2	2	261	210	198	0	1000	0	100	0	1000	0	0	0	0	0	100	0	100	0	100
26	2	2	163	150	150	150	150	150	126	114	102	162	150	162	162	114	138	0	0	138	100
27	2	2	179	186	174	198	174	174	0	114	100	162	1000	162	198	174	100	126	0	138	100
28	2	2	107	186	174	198	174	174	0	114	100	162	1000	162	198	174	100	126	0	138	100
29	2	2	210	222	210	0	1000	0	100	0	100	0	1000	0	0	0	100	0	100	0	100
30	2	2	248	210	234	210	0	100	0	100	0	100	0	100	198	100	0	100	0	100	0
31	2	1	217	234	222	100	222	100	100	100	100	100	0	100	222	100	100	100	100	100	0
32	2	1	200	174	150	1000	1000	162	162	100	100	174	100	0	174	0	0	0	0	0	0
33	2	2	82	78	90	1000	1000	0	66	0	78	0	1000	0	78	0	90	0	0	0	0
34	2	1	74	54	66	1000	1000	42	66	0	42	0	0	0	54	0	0	54	54	54	66
35	2	1	122	138	138	126	138	138	138	114	100	144	0	150	0	150	138	138	114	138	114
36	2	1	273	198	198	1000	1000	1000	1000	1000	1000	100	150	0	198	100	0	100	0	100	1000
37	2	1		210	198	1000	1000	1000	1000	1000	1000	100	100	0	210	100	100	100	126	100	100
38	2	1	271	258	246	258	246	100	100	100	100	100	100	100	258	100	100	100	100	100	126
39	2	1	133	150	162	150	150	150	126	0	0	138	0	138	150	138	138	0	0	0	0
40	2	2	231	198	198	1000	1000	198	100	100	100	100	100	100	198	100	100	1000	1000	100	126
41	2	1	124	126	126	0	1000	0	0	0	0	0	0	0	126	0	0	0	0	0	0
42	2	1	118	126	138	114	126	114	102	114	0	102	114	102	114	126	114	114	0	126	0
43	2	2	126	162	150	162	150	162	162	114	100	174	0	174	174	186	0	138	0	138	126
44	2	1	226	210	222	210	222	186	100	114	100	0	0	0	210	186	0	138	100	138	100
45	2	1	129	126	138	114	138	126	126	114	100	126	126	126	114	114	114	114	0	114	114
46	2	2	133	150	162	150	150	150	162	114	100	162	100	162	150	0	0	126	100	126	100
47	2	2	113	126	126	126	126	126	114	126	0	0	0	0	126	0	1000	114	0	114	0
48	2	2	112	138	138	138	150	126	126	114	102	150	126	138	138	138	138	126	114	138	114
49	2	2	136	150	138	138	138	138	126	0	0	0	0	0	150	0	0	0	0	0	0
50	2	2	146	138	138	150	138	138	126	114	100	126	126	0	150	138	100	126	114	126	126

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	28 M	28 L	27 M	27 L	26 M	26 L	25 M	25 L	24 M	24 L	23 M	23 L	22 M	22 L	21 M	21 L
51	2	2	268	282	234	282	222	100	100	100	100	100	100	100	282	100	100	100	100	100	100
52	2	1	67	66	78	1000	1000	90	90	66	66	66	78	66	66	54	66	54	66	66	66
53	2	2	213	282	234	282	234	100	0	100	0	100	0	100	282	100	0	100	0	100	0
54	2	2	131	114	114	114	114	126	102	0	100	114	114	126	114	0	126	0	0	0	90
55	2	2	248	222	234	0	0	0	0	0	0	0	0	0	222	0	0	0	0	0	0
56	2	1	129	78	66	1000	1000	90	0	78	0	78	0	78	90	78	0	0	0	0	0
57	2	1	170	162	174	1000	0	162	0	114	0	174	0	174	162	174	0	0	0	0	0
58	2	1	208	174	198	1000	1000	174	0	114	0	0	0	0	174	0	0	0	0	126	0
59	2	2	223	186	198	0	198	0	100	0	1000	0	0	0	198	0	0	0	0	0	0
60	2	1	101	114	102	1000	1000	102	102	114	100	114	102	126	114	114	114	102	102	114	102
61	2	2	161	150	150	1000	1000	150	150	114	100	162	150	162	162	150	100	138	126	138	126
62	2	1	57	0	54	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2	1	239	258	234	258	234	100	100	100	100	100	100	100	258	100	100	100	0	100	0
64	2	1	131	150	150	150	150	150	150	100	100	138	126	150	150	138	138	100	114	100	126
65	2	1	157	150	138	1000	1000	0	150	100	100	1000	138	1000	150	0	1000	1000	1000	100	0
66	2	1	214	234	246	234	246	100	100	100	100	100	100	100	234	100	0	100	0	100	0
67	2	2	193	198	198	198	186	100	100	100	100	100	100	100	198	100	100	100	100	100	100
68	2	2	191	198	198	198	186	100	100	100	100	100	100	100	198	100	100	100	100	100	100
69	2	2	193	210	222	222	222	100	100	100	100	100	0	100	210	100	0	100	100	100	100
70	2	1	130	114	102	102	114	114	102	0	0	0	0	0	114	0	0	0	0	0	0
71	2	2	255	282	234	282	234	100	100	100	100	100	0	100	282	100	100	100	1000	100	100
72	2	2	60	0	66	1000	0	0	0	0	0	0	0	0	78	0	0	0	0	0	0
73	2	1	197	246	234	246	0	100	0	100	0	0	0	0	246	0	0	0	0	0	0
74	2	2	226	222	234	222	234	100	100	1000	0	100	100	1000	222	100	0	100	0	100	1000
75	2	2	218	246	234	1000	234	0	1000	1000	1000	0	0	0	246	0	0	0	0	0	100
76	2	1	206	174	174	186	162	100	100	100	100	0	0	1000	186	0	0	0	0	0	100
77	2	1	182	162	162	0	1000	0	0	0	0	0	0	0	174	0	0	0	0	0	0
78	2	1	256	282	222	282	222	100	100	1000	1000	100	100	100	282	100	100	100	100	100	0
79	2	1	234	282	222	282	222	100	174	100	0	100	150	100	282	100	0	100	0	100	0
80	2	1	249	222	222	222	222	100	100	100	100	100	162	0	222	138	138	0	100	0	0
81	2	2	196	150	162	1000	1000	174	100	1000	100	0	100	0	150	174	100	0	100	0	100
82	2	2	145	126	114	1000	1000	114	114	0	100	126	114	0	126	0	126	0	102	0	0
83	2	2	115	90	90	1000	1000	90	102	90	90	102	102	78	90	101	90	90	90	90	90
84	2	2	101	90	78	1000	1000	90	90	90	78	102	90	78	90	101	78	90	78	90	78
85	2	2	259	234	246	234	246	100	100	100	100	100	0	100	234	100	0	100	100	100	100
86	2	2	93	90	90	1000	1000	90	90	0	78	90	90	102	90	101	78	102	90	102	90
87	2	2	158	174	162	174	150	174	174	100	0	0	1000	0	174	0	100	0	100	0	100
88	2	2	140	150	150	150	150	150	150	100	100	150	150	138	150	150	100	138	126	138	102
89	2	2	172	198	186	1000	1000	198	186	100	0	100	0	100	198	100	100	100	0	100	100
90	2	2	119	114	102	1000	1000	114	102	114	0	0	0	0	102	0	114	0	0	0	0
91	2	2	209	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2	2	136	78	150	1000	150	78	138	78	102	0	138	0	78	0	100	1000	1000	102	126
93	2	2	116	138	138	1000	138	138	138	126	102	0	126	126	138	126	126	0	1000	0	126
94	2	2	99	114	102	1000	102	138	102	102	90	102	102	0	114	114	114	1000	1000	114	102
95	2	2	248	222	210	0	0	0	0	0	0	0	0	0	222	0	0	0	0	0	0
96	2	2	175	150	150	162	150	0	0	0	0	0	0	0	162	0	0	0	0	0	0
97	2	2	216	198	174	1000	1000	198	174	1000	1000	0	100	0	186	186	100	100	100	100	100
98	2	1	75	78	78	1000	1000	78	90	78	78	65	90	78	78	66	66	66	78	78	78
99	2	1	119	126	126	126	138	126	102	114	102	0	114	0	126	126	114	126	102	126	114
100	2	2	149	174	174	198	174	198	174	100	100	100	0	100	162	100	0	100	100	100	100

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	28 M	28 L	27 M	27 L	26 M	26 L	25 M	25 L	24 M	24 L	23 M	23 L	22 M	22 L	21 M	21 L
101	2	1	222	234	198	234	198	100	100	100	100	100	100	1000	234	100	100	100	100	100	100
102	2	1	202	198	174	198	174	198	174	100	100	0	0	0	198	138	138	100	100	100	100
103	2	1	267	270	246	270	246	100	100	0	100	100	100	100	270	100	100	100	0	0	0
104	2	2	226	198	198	1000	1000	198	0	0	0	0	0	1000	198	0	100	100	100	100	100
105	2	2	178	162	150	174	162	162	150	0	100	174	150	0	162	174	100	100	100	100	126
106	2	1	249	270	222	282	234	100	0	100	100	100	100	100	282	100	100	100	0	100	0
107	2	2	240	198	186	198	0	198	0	100	0	0	0	0	198	186	100	100	100	100	0
108	2	1	113	114	102	1000	102	114	102	0	102	126	102	114	114	114	114	102	102	126	102
109	2	1	190	186	174	198	150	198	0	1000	1000	100	0	100	198	100	0	100	100	100	0
110	2	1	260	198	198	1000	1000	1000	1000	1000	0	0	0	0	198	0	0	0	0	0	0
111	2	1	246	282	246	282	234	100	100	100	100	100	100	100	282	100	100	100	0	100	0
112	2	1	232	234	234	100	234	100	100	100	100	100	0	100	234	100	0	100	0	100	0
113	1	2	282	270	222	282	0	100	0	100	0	100	0	0	282	0	0	0	0	0	0
114	1	1	212	222	234	234	234	1000	1000	100	100	100	100	100	234	100	100	1000	1000	138	100
115	1	2	248	162	198	1000	1000	174	100	1000	0	0	0	0	162	0	0	100	0	100	100
116	1	1	161	222	174	222	1000	100	174	1000	100	1000	1000	100	222	100	100	100	100	100	100
117	1	1	227	198	150	1000	1000	198	0	100	0	0	150	100	198	0	100	0	100	100	0
118	1	1	275	210	198	1000	1000	210	100	100	100	100	0	100	210	100	100	100	0	100	100
119	1	2	222	210	210	210	210	100	0	100	0	0	0	0	210	0	0	0	0	0	0
120	1	2	214	198	234	1000	234	186	1000	1000	0	114	0	100	198	0	1000	1000	1000	0	0
121	1	1	232	150	198	1000	1000	174	162	100	100	162	100	162	174	174	100	0	100	100	114
122	1	1	187	162	162	1000	1000	174	162	1000	1000	0	150	0	162	150	0	1000	0	138	0
123	1	1	161	0	150	0	150	0	150	0	100	0	0	0	0	0	0	0	100	0	100
124	1	2	228	174	198	174	198	174	100	100	100	162	100	0	174	0	0	0	0	100	0
125	1	2	236	174	198	174	198	174	100	100	100	162	100	0	174	0	0	0	0	100	0
126	1	2	206	234	234	234	222	100	100	100	100	1000	100	0	234	0	100	100	0	100	126
127	1	1	203	186	186	174	150	186	100	1000	1000	1000	1000	1000	174	1000	1000	1000	1000	1000	1000
128	1	1	195	186	186	174	150	186	100	1000	1000	1000	1000	1000	174	1000	1000	1000	1000	1000	1000
129	1	1	146	138	150	138	126	126	138	0	0	0	150	0	126	0	0	0	0	0	0
130	1	1	267	258	246	1000	246	100	1000	1000	1000	100	100	100	258	100	0	100	100	100	100
131	1	2	140	126	150	126	138	126	0	0	0	0	0	0	126	0	0	0	0	0	0
132	1	2	179	174	174	1000	1000	0	0	0	0	0	138	0	174	0	0	0	0	0	0
133	1	2	140	126	138	1000	1000	126	138	100	100	126	138	126	126	114	138	0	0	126	0
134	1	2	184	162	162	1000	1000	162	150	162	100	162	0	162	162	162	100	100	100	100	100
135	1	1	122	102	102	1000	1000	114	102	114	102	1000	102	0	102	114	114	114	102	114	102
136	1	1	142	138	114	0	114	0	102	0	0	0	0	0	126	0	0	0	0	0	0
137	1	1	177	150	162	150	150	162	150	100	100	0	150	0	150	150	0	138	0	138	0
138	1	1	156	174	162	174	174	174	0	0	0	0	138	0	174	162	100	100	0	100	100
139	1	1	165	186	162	186	174	174	150	100	100	0	0	0	186	0	0	100	0	100	0
140	1	2	148	162	162	1000	1000	174	150	100	100	174	100	174	162	174	100	0	0	0	0
141	1	2	177	174	198	1000	1000	186	100	100	100	100	100	100	174	100	100	100	100	100	100
142	1	1	177	222	210	210	198	100	0	100	100	0	0	0	222	0	0	0	0	100	0
143	1	1	156	162	150	174	150	162	150	0	1000	162	0	162	162	138	0	0	0	0	0
144	1	2	141	150	150	138	138	138	138	0	100	0	150	0	138	150	138	100	100	100	100
145	1	1	99	102	102	1000	102	0	102	0	0	0	0	0	102	0	0	0	0	0	0
146	1	1	132	126	138	126	138	126	126	0	0	0	126	0	126	0	114	0	90	0	90
147	1	2	117	138	138	138	138	138	126	126	0	0	0	0	138	0	100	0	126	0	114
148	1	2	124	138	150	138	150	138	138	126	0	150	0	0	138	0	100	0	126	0	114
149	1	1	105	102	90	1000	1000	102	90	0	0	0	102	0	102	0	0	0	0	0	90
150	1	1	120	114	102	1000	1000	114	102	114	102	0	114	0	114	114	114	0	102	0	102

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	28 M	28 L	27 M	27 L	26 M	26 L	25 M	25 L	24 M	24 L	23 M	23 L	22 M	22 L	21 M	21 L
151	1	1	100	90	90	1000	1000	90	90	90	90	0	90	0	90	0	90	0	78	0	90
152	1	1	156	138	138	1000	1000	150	138	0	100	0	138	1000	138	138	138	0	114	0	100
153	1	1	104	102	102	1000	1000	102	102	102	90	102	102	0	102	114	90	0	102	0	90
154	1	1	86	90	90	1000	1000	78	102	0	78	0	78	0	90	78	78	0	78	0	90
155	1	1	158	126	138	126	138	126	150	0	100	0	1000	0	126	126	100	0	100	0	0
156	1	2	85	90	90	1000	1000	90	90	0	0	0	0	0	90	0	0	0	0	0	0
157	1	2	192	174	174	174	174	0	0	0	0	0	0	0	186	0	0	0	0	0	0
158	1	2	130	126	138	1000	1000	114	126	0	100	0	126	0	126	0	0	100	100	100	126
159	1	1	139	150	150	150	150	150	0	1000	1000	1000	0	0	150	0	100	0	0	0	0
160	1	2	124	102	126	1000	0	102	0	0	0	0	0	0	114	0	0	0	0	0	0
161	1	2	86	0	90	1000	1000	0	90	0	78	0	78	0	78	0	0	0	0	0	0
162	1	1	63	90	66	1000	1000	90	90	0	78	0	66	0	90	0	66	0	66	0	66
163	1	1	106	66	90	1000	1000	66	102	66	0	0	0	0	66	0	0	0	0	0	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

4) Lower Left

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	38 M	38 L	37 M	37 L	36 M	36 L	35 M	35 L	34 M	34 L	33 M	33 L	32 M	32 L	31 M	31 L
1	2	2	211	198	198	198	198	186	100	100	100	162	150	162	100	0	0	0	0	0	0
2	2	2	123	174	150	174	162	162	150	100	100	0	0	150	0	138	150	0	0	0	0
3	2	2	138	138	138	0	1000	174	0	126	126	0	1000	126	126	114	114	114	100	114	0
4	2	2	205	138	126	0	1000	126	102	114	114	0	1000	126	102	126	114	0	0	0	0
5	2	1	237	270	222	270	198	186	100	126	100	174	100	100	100	100	100	100	100	100	100
6	2	1	258	198	186	186	162	186	100	126	100	174	1000	0	100	174	150	138	100	138	0
7	2	1	244	198	186	186	162	186	100	126	100	174	1000	0	100	174	150	138	100	138	0
8	2	1	204	0	150	0	1000	0	150	0	100	0	0	0	0	0	0	0	0	0	0
9	2	1	126	126	126	0	1000	126	126	126	114	126	114	138	126	114	114	126	0	126	0
10	2	1	155	174	150	174	162	162	150	114	100	150	150	150	138	138	138	114	102	114	102
11	2	1	168	138	150	174	150	162	150	126	114	150	138	162	150	174	150	0	100	0	100
12	2	2	237	210	198	1000	1000	198	100	100	100	1000	1000	100	0	100	0	100	0	100	0
13	2	1	144	138	138	0	150	0	138	0	100	0	138	0	138	0	0	0	0	0	0
14	2	1	215	198	198	198	198	198	174	126	100	174	100	162	100	0	0	126	0	126	0
15	2	1	128	114	102	102	102	114	102	114	0	0	126	0	0	0	0	0	0	0	0
16	2	1	270	258	270	270	100	100	100	100	100	100	100	100	100	100	100	100	0	100	0
17	2	1	198	210	198	198	198	198	100	126	100	174	100	162	100	162	0	0	1000	0	100
18	2	1	146	150	138	138	150	138	138	126	100	126	126	138	138	126	126	0	100	0	100
19	2	1	245	0	174	0	1000	0	0	0	100	0	0	0	0	0	0	0	0	0	0
20	2	2	157	150	162	150	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	2	1	268	150	150	0	150	138	150	150	1000	150	150	150	100	138	100	126	100	126	100
22	2	1	225	114	102	1000	1000	114	102	114	114	114	114	114	102	114	114	114	102	114	102
23	2	2	258	234	234	234	100	198	100	100	100	100	100	100	0	100	0	100	0	100	0
24	2	1	141	174	150	174	150	162	150	1000	1000	150	150	162	150	0	0	0	0	126	100
25	2	2	261	210	198	0	198	0	100	0	100	0	1000	0	100	0	100	0	100	0	100
26	2	2	163	150	150	162	150	162	102	114	114	150	150	150	150	0	0	0	0	114	0
27	2	2	179	186	174	174	174	162	174	126	100	162	150	162	100	162	138	0	100	0	0
28	2	2	107	186	174	174	174	162	174	126	100	162	150	162	100	162	138	0	100	0	0
29	2	2	210	222	210	222	210	0	100	0	100	0	100	0	1000	0	150	0	100	0	100
30	2	2	248	210	234	100	100	100	100	100	100	100	0	100	0	100	0	100	0	100	0
31	2	1	217	234	222	222	222	100	100	100	100	100	0	100	0	100	0	100	100	100	0
32	2	1	200	174	150	174	150	174	174	100	100	174	100	0	0	0	0	0	0	0	0
33	2	2	82	78	90	1000	0	78	90	78	90	0	1000	0	102	0	90	0	78	0	0
34	2	1	74	54	66	1000	1000	54	66	54	66	54	66	54	66	66	66	54	54	54	66
35	2	1	122	138	138	138	126	138	126	126	100	150	150	150	150	138	126	114	100	114	100
36	2	1	273	198	198	1000	1000	198	100	100	1000	100	150	100	138	100	0	100	0	100	0
37	2	1		210	198	1000	1000	210	100	100	100	100	162	100	100	100	150	100	100	100	100
38	2	1	271	258	246	258	100	100	186	100	0	100	100	100	100	100	100	100	100	100	100
39	2	1	133	150	162	150	162	150	150	126	100	138	126	138	138	0	138	0	114	0	100
40	2	2	231	198	198	1000	1000	198	100	1000	1000	100	100	100	100	100	100	100	100	100	100
41	2	1	124	126	126	0	1000	126	126	114	0	126	126	0	0	0	0	0	0	0	0
42	2	1	118	126	138	114	150	126	126	126	114	126	126	114	114	114	114	114	0	114	0
43	2	2	126	162	150	162	150	162	162	126	114	174	150	174	100	162	150	114	100	114	100
44	2	1	226	210	222	198	222	186	100	126	100	174	150	0	0	0	0	100	100	100	100
45	2	1	129	126	138	114	138	126	126	114	100	126	126	126	126	114	114	114	100	114	100
46	2	2	133	150	162	150	162	150	150	126	114	150	150	150	150	138	150	126	100	126	100
47	2	2	113	126	126	126	138	126	114	126	114	0	126	0	126	0	126	114	100	114	100
48	2	2	112	138	138	138	138	138	138	114	114	114	114	138	126	138	126	102	0	0	0
49	2	2	136	150	138	150	150	150	138	114	114	150	138	126	126	114	126	0	0	0	0
50	2	2	146	138	138	126	138	150	138	126	100	138	138	150	100	150	126	126	100	114	100

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	38 M	38 L	37 M	37 L	36 M	36 L	35 M	35 L	34 M	34 L	33 M	33 L	32 M	32 L	31 M	31 L
51	2	2	268	282	234	282	100	0	100	1000	1000	100	100	100	100	100	100	100	0	100	0
52	2	1	67	66	78	1000	1000	66	90	78	66	66	78	66	78	0	66	0	66	66	66
53	2	2	213	282	234	282	100	100	100	1000	1000	100	0	100	0	100	0	100	0	100	0
54	2	2	131	114	114	102	114	126	114	114	100	126	126	114	114	114	114	102	100	114	100
55	2	2	248	222	234	222	100	100	100	100	100	100	100	100	100	100	150	100	100	100	100
56	2	1	129	78	66	1000	1000	90	78	78	78	66	66	78	66	66	66	66	54	66	54
57	2	1	170	162	174	1000	1000	162	174	126	100	162	150	0	0	0	0	0	0	0	0
58	2	1	208	174	198	1000	1000	174	100	126	100	162	100	162	100	0	100	0	0	0	0
59	2	2	223	186	198	186	198	186	100	126	100	0	100	0	100	0	100	0	100	0	100
60	2	1	101	114	102	1000	1000	114	114	102	90	114	114	114	102	114	114	102	102	102	102
61	2	2	161	150	150	1000	1000	162	150	126	100	150	150	150	150	150	138	126	100	114	100
62	2	1	57	0	54	0	1000	0	54	0	42	0	0	0	0	0	0	0	0	0	0
63	2	1	239	258	234	258	1000	100	100	100	100	100	100	100	100	100	100	100	100	100	100
64	2	1	131	150	150	150	162	150	150	126	100	150	150	150	138	138	0	0	0	0	0
65	2	1	157	150	138	150	1000	100	138	126	100	1000	126	126	1000	0	126	126	0	126	100
66	2	1	214	234	246	234	100	100	100	1000	1000	100	100	100	100	100	100	100	0	100	0
67	2	2	193	198	198	198	210	1000	1000	100	100	100	100	100	100	100	100	100	100	100	100
68	2	2	191	198	198	198	210	1000	1000	100	100	100	100	100	100	100	100	100	100	100	100
69	2	2	193	210	222	210	198	100	100	100	100	100	100	100	100	100	0	100	0	100	0
70	2	1	130	114	102	102	102	114	102	114	90	114	114	114	102	114	114	102	102	102	102
71	2	2	255	282	234	282	100	100	100	100	100	100	1000	100	0	100	0	100	0	100	0
72	2	2	60	0	66	0	1000	0	0	0	0	0	0	0	0	0	54	0	66	0	66
73	2	1	197	246	234	246	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0
74	2	2	226	222	234	222	222	100	100	1000	1000	100	150	100	100	0	100	0	0	0	0
75	2	2	218	246	234	246	1000	100	100	100	100	0	100	0	0	0	0	0	100	0	100
76	2	1	206	174	174	1000	1000	186	186	100	100	162	100	0	0	0	0	0	100	0	100
77	2	1	182	162	162	174	162	174	0	100	100	162	162	162	100	0	0	0	0	0	0
78	2	1	256	282	222	282	1000	1000	100	1000	1000	100	150	100	100	100	100	100	100	100	0
79	2	1	234	282	222	282	234	100	100	100	100	100	100	100	100	100	0	100	0	100	100
80	2	1	249	222	222	1000	1000	100	100	100	100	1000	1000	100	100	138	100	100	0	100	100
81	2	2	196	150	162	102	150	0	0	1000	0	174	100	162	100	174	100	1000	100	1000	1000
82	2	2	145	126	114	1000	1000	126	114	114	100	114	114	126	114	126	114	102	102	102	102
83	2	2	115	90	90	1000	1000	90	90	90	90	90	90	90	90	102	90	90	90	90	90
84	2	2	101	90	78	1000	1000	90	90	90	90	90	90	90	78	102	90	90	78	90	90
85	2	2	259	234	246	234	234	100	100	100	100	162	150	100	0	100	0	100	0	100	0
86	2	2	93	90	90	1000	1000	90	90	90	90	90	90	90	90	102	114	102	90	90	90
87	2	2	158	174	162	174	162	174	174	100	100	0	1000	0	0	0	100	0	100	0	100
88	2	2	140	150	150	150	138	150	150	100	100	150	150	162	100	150	138	100	100	100	100
89	2	2	172	198	186	1000	1000	198	174	100	100	100	150	100	100	100	0	100	0	100	100
90	2	2	119	114	102	1000	1000	114	102	114	114	114	114	126	126	102	114	0	0	0	0
91	2	2	209	0	138	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2	2	136	78	150	1000	162	78	138	78	100	1000	150	138	100	0	138	0	100	0	100
93	2	2	116	138	138	126	138	126	114	114	102	126	126	138	126	126	126	100	114	100	100
94	2	2	99	114	102	102	102	114	114	114	90	102	114	114	102	102	102	114	0	114	90
95	2	2	248	222	210	222	210	100	174	100	100	0	1000	0	0	0	0	0	0	0	0
96	2	2	175	150	150	150	150	150	126	100	100	0	162	0	100	0	0	0	0	0	0
97	2	2	216	198	174	1000	1000	186	174	100	100	100	100	100	100	100	100	100	100	100	100
98	2	1	75	78	78	1000	1000	78	90	78	78	78	66	78	78	66	66	66	78	78	78
99	2	1	119	126	126	126	138	126	102	126	114	114	114	114	126	114	114	126	102	114	100
100	2	2	149	174	174	174	174	174	174	126	100	162	150	150	150	0	0	0	0	0	0

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	38 M	38 L	37 M	37 L	36 M	36 L	35 M	35 L	34 M	34 L	33 M	33 L	32 M	32 L	31 M	31 L
101	2	1	222	234	198	234	198	100	174	100	100	100	100	100	100	100	100	100	100	100	100
102	2	1	202	198	174	198	174	198	174	100	100	100	162	100	100	0	150	100	100	100	100
103	2	1	267	270	246	270	100	0	0	0	0	100	100	100	100	100	100	100	100	100	100
104	2	2	226	198	198	1000	1000	198	0	1000	0	100	100	100	100	186	162	100	100	100	100
105	2	2	178	162	150	174	150	162	150	100	100	162	150	162	138	0	150	100	0	100	0
106	2	1	249	270	222	270	222	100	100	100	100	100	100	100	100	100	100	100	100	100	100
107	2	2	240	198	186	198	174	174	186	1000	1000	1000	1000	1000	1000	1000	0	1000	1000	1000	1000
108	2	1	113	114	102	102	102	126	114	126	114	126	126	114	114	114	114	126	0	126	102
109	2	1	190	186	174	186	174	198	174	1000	1000	100	100	100	100	100	100	100	100	100	100
110	2	1	260	198	198	198	198	186	0	100	0	0	0	100	0	100	0	100	100	100	100
111	2	1	246	282	246	282	100	198	100	100	100	100	162	100	100	100	0	100	0	100	0
112	2	1	232	234	234	100	222	100	100	0	100	100	100	100	100	100	150	100	0	100	0
113	1	2	282	270	222	270	222	100	100	100	100	1000	100	100	0	100	0	100	1000	100	0
114	1	1	212	222	234	222	100	100	100	1000	100	150	1000	150	100	162	100	100	100	100	100
115	1	2	248	162	198	1000	1000	162	174	1000	1000	1000	100	100	100	0	100	100	100	100	100
116	1	1	161	222	174	222	1000	100	174	100	100	100	1000	100	100	100	100	100	100	100	0
117	1	1	227	198	150	1000	1000	198	0	100	100	100	0	100	0	100	0	100	0	100	100
118	1	1	275	210	198	1000	1000	210	100	100	100	100	100	100	100	0	100	0	100	0	100
119	1	2	222	210	210	1000	1000	100	100	100	100	1000	100	100	100	162	0	100	0	100	0
120	1	2	214	198	234	1000	100	198	100	114	0	126	1000	150	100	100	0	100	0	100	0
121	1	1	232	150	198	198	198	138	126	114	90	162	114	150	150	162	100	126	100	126	100
122	1	1	187	162	162	162	162	162	150	0	114	0	162	0	100	0	150	0	1000	0	100
123	1	1	161	0	150	0	150	0	126	100	0	174	114	174	138	162	150	100	1000	100	100
124	1	2	228	174	198	1000	1000	174	100	1000	100	174	100	174	100	162	0	100	0	100	0
125	1	2	236	174	198	1000	1000	174	100	0	1000	0	100	0	100	100	0	100	100	100	100
126	1	2	206	234	234	234	100	0	100	1000	100	1000	100	1000	0	1000	0	1000	100	1000	100
127	1	1	203	186	186	174	174	174	100	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
128	1	1	195	186	186	174	174	174	100	126	1000	150	1000	1000	1000	1000	1000	1000	1000	1000	1000
129	1	1	146	138	150	138	162	126	138	0	100	0	150	0	0	0	0	0	0	0	0
130	1	1	267	258	246	258	100	100	100	114	1000	150	0	138	100	126	100	114	100	114	100
131	1	2	140	126	150	126	114	126	138	100	114	1000	150	100	138	100	126	100	0	100	0
132	1	2	179	174	174	1000	1000	100	174	126	100	1000	1000	138	100	126	162	126	100	114	100
133	1	2	140	126	138	1000	1000	126	138	114	100	150	1000	162	138	1000	138	100	100	100	100
134	1	2	184	162	162	1000	1000	150	150	114	114	126	150	114	100	114	100	114	100	114	1000
135	1	1	122	102	102	102	102	102	102	126	102	126	126	114	102	0	114	0	90	0	90
136	1	1	142	138	114	126	114	126	114	100	114	150	102	162	0	0	0	126	0	126	0
137	1	1	177	150	162	150	162	150	150	100	100	1000	150	162	150	162	0	1000	0	100	0
138	1	1	156	174	162	174	174	174	174	100	100	174	1000	0	100	0	150	0	1000	0	100
139	1	1	165	186	162	186	174	186	150	100	100	174	150	174	100	162	0	100	0	100	0
140	1	2	148	162	162	1000	1000	174	174	100	100	100	100	100	100	100	100	100	100	100	100
141	1	2	177	174	198	1000	1000	185	100	100	100	0	100	0	100	0	100	0	100	0	100
142	1	1	177	222	210	222	210	100	100	162	100	0	0	0	0	0	0	0	0	0	0
143	1	1	156	162	150	162	150	162	150	100	100	1000	150	150	100	150	138	100	0	100	0
144	1	2	141	150	150	1000	102	150	150	0	100	0	1000	0	138	0	150	0	100	0	100
145	1	1	99	102	102	102	102	102	102	126	90	114	102	126	0	0	0	0	0	0	0
146	1	1	132	126	138	126	150	126	138	114	114	150	126	138	114	138	114	126	0	126	0
147	1	2	117	138	138	138	150	138	138	114	100	150	126	138	138	138	126	126	100	126	100
148	1	2	124	138	150	138	150	138	150	102	100	102	138	90	150	102	150	0	100	0	100
149	1	1	105	102	90	1000	1000	102	90	114	90	114	90	114	90	114	90	114	78	114	90
150	1	1	120	114	102	1000	1000	114	102	90	102	0	114	0	102	0	114	0	90	0	102

Appendix 9 – *Microsoft Excel*® sheet that contains the sample number, gender, institution, real age and estimated age attributed by both observers for the left and right side (FDI).

SPSS	Institution	Gender	Real age	Age estimate Left M	Age estimate Left L	38 M	38 L	37 M	37 L	36 M	36 L	35 M	35 L	34 M	34 L	33 M	33 L	32 M	32 L	31 M	31 L
151	1	1	100	90	90	1000	1000	90	90	100	78	138	90	150	78	114	0	0	0	0	0
152	1	1	156	138	138	150	150	138	150	102	100	102	138	1000	126	114	114	102	102	102	100
153	1	1	104	102	102	1000	1000	102	102	90	90	78	102	78	102	78	114	0	102	0	102
154	1	1	86	90	90	1000	1000	78	90	126	78	126	90	138	90	126	78	100	90	100	90
155	1	1	158	126	138	126	150	126	138	90	100	90	138	90	138	0	0	0	0	0	0
156	1	2	85	90	90	1000	1000	90	90	100	90	0	90	0	90	0	78	0	0	0	0
157	1	2	192	174	174	174	174	100	174	126	100	150	0	138	0	0	0	0	0	0	0
158	1	2	130	126	138	1000	1000	138	138	100	90	150	138	138	126	138	126	100	114	100	100
159	1	1	139	150	150	150	150	150	150	102	114	0	150	0	138	0	0	0	0	0	100
160	1	2	124	102	126	1000	1000	102	126	0	0	1000	1000	114	126	0	114	0	0	0	0
161	1	2	86	0	90	1000	1000	0	90	90	90	90	90	0	90	78	90	0	78	0	0
162	1	1	63	90	66	1000	1000	90	90	66	78	66	66	66	78	66	66	66	78	66	66
163	1	1	106	66	90	1000	1000	66	102	66	90	66	0	66	0	66	0	66	0	66	0

Appendix 10 – Distribution of the sample by institution, gender and chronological age.

Institution

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	HSM	51	31,3	31,3	31,3
	FMDUL	112	68,7	68,7	100,0
	Total	163	100,0	100,0	

Institution

		HSM Gender		FMDUL Gender	
		Male Score	Female Score	Male Score	Female Score
Chronological age	4	0	0	1	0
	5	1	0	1	1
	6	0	0	2	1
	7	1	2	0	1
	8	5	0	1	3
	9	0	1	3	5
	10	2	3	8	3
	11	3	3	2	5
	12	1	1	3	3
	13	7	0	1	4
	14	2	2	2	4
	15	1	1	2	1
	16	2	1	4	3
	17	1	2	5	5
	18	1	1	4	5
	19	1	2	4	2
	20	0	1	5	4
	21	0	0	4	4
	22	2	0	5	1
	23	0	1	0	0

Appendix 10 – Distribution of the sample by institution, gender and chronological age.

Gender

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Male	87	53,4	53,4	53,4
	Female	76	46,6	46,6	100,0
	Total	163	100,0	100,0	

Appendix 11 – Intraobserver agreement.

- **RIGHT SIDE**

Intraclass correlation coefficient

	Intraclass correlation[b]	Confidence Interval 95%		Test F with True0 Value			
		Inferior limit	Upper limit	Value	gl1	gl2	Sig
Unique measures	,956[a]	,886	,984	43,368	16	16	,000
Average measurements	,978[c]	,939	,992	43,368	16	16	,000

Mixed effects model bidirectional in which the effects of the people are random and those of the measures are fixed.
a. The estimator is the same whether the interaction effect is present or not.
b. The intraclass correlation coefficients type A that use an absolute agreement definition.
c. This estimate is calculated considering that the interaction effect is absent because it cannot be estimated otherwise.

Reliability statistics

Cronbach Alfa	Number of items
,977	2

- **LEFT SIDE**

Intraclass correlation coefficient

	Intraclass correlation[b]	Confidence Interval 95%		Test F with True0 Value			
		Inferior limit	Upper limit	Value	gl1	gl2	Sig
Unique measures	,977[a]	,938	,991	84,500	16	16	,000
Average measurements	,988[c]	,968	,996	84,500	16	16	,000

Mixed effects model bidirectional in which the effects of the people are random and those of the measures are fixed.
a. The estimator is the same whether the interaction effect is present or not.
b. The intraclass correlation coefficients type A that use an absolute agreement definition.
c. This estimate is calculated considering that the interaction effect is absent because it cannot be estimated otherwise.

Reliability statistics

Cronbach Alfa	Number of items
,988	2

Appendix 12 – Estimation frequencies and differences for the intraobserver agreement.

Dif_Right_1_2

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	-36,00	1	5,9	5,9	5,9
	-24,00	1	5,9	5,9	11,8
	-12,00	2	11,8	11,8	23,5
	,00	10	58,8	58,8	82,4
	12,00	2	11,8	11,8	94,1
	24,00	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

Dif_Left_1_2

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	-12,00	2	11,8	11,8	11,8
	,00	11	64,7	64,7	76,5
	12,00	3	17,6	17,6	94,1
	24,00	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

Frequency statistics

		Dif_Right_1_2	Dif_Left_1_2
N	Valid	17	17
	Omission	0	0
Mean		-2,1176	2,1176
Median		,0000	,0000
Minimum		-36,00	-12,00
Maximum		24,00	24,00

Appendix 13 – Interobserver agreement (M *versus* L).

Frequency statistics

		Dif_Right_M_L	Dif_Left_M_L
N	Valid	157	156
	Omission	6	7
Mean		4,1274	4,0000
Median		,0000	,0000
Minimum		-72,00	-72,00
Maximum		60,00	60,00

- **Right side London_ Right_M *versus* London_Right_L**

Intraclass correlation coefficient

		Confidence Interval 95%		Test F with True0 Value			
	Intraclass correlation[b]	Inferior limit	Upper limit	Valor	Inferior limit	Upper limit	Sig
Unique measures	,923[a]	,895	,944	25,872	156	156	,000
Average measurements	,960[c]	,944	,971	25,872	156	156	,000

Mixed effects model bidirectional in which the effects of the people are random and those of the measures are fixed.
a. The estimator is the same whether the interaction effect is present or not.
b. The intraclass correlation coefficients type A that use an absolute agreement definition.
c. This estimate is calculated considering that the interaction effect is absent because it cannot be estimated otherwise.

Reliability statistics

Cronbach Alfa	Number of de items
,961	2

Case processing summary

		N	%
Cases	Valid	157	96,3
	Excluded[a]	6	3,7
	Total	163	100,0

a. Exclusion by listwise method based on all procedure variables.

Appendix 13 – Interobserver agreement (M *versus* L).

- **Left side London_ Left_M *versus* London_Left_L**

Intraclass correlation coefficient

		Confidence Interval 95%		Test F with True0 Value			
	Intraclass correlation[b]	Inferior limit	Upper limit	Valor	Inferior limit	Upper limit	Sig
Unique measures	,927[a]	,900	,947	27,356	155	155	,000
Average measurements	,962[c]	,947	,973	27,356	155	155	,000

Mixed effects model bidirectional in which the effects of the people are random and those of the measures are fixed.
a. The estimator is the same whether the interaction effect is present or not.
b. The intraclass correlation coefficients type A that use an absolute agreement definition.
c. This estimate is calculated considering that the interaction effect is absent because it cannot be estimated otherwise.

Reliability statistics

Cronbach Alfa	Number of items
,963	2

Case processing summary

		N	%
Cases	Valid	156	95,7
	Excluded[a]	7	4,3
	Total	163	100,0

a. Exclusion by listwise method based on all procedure variables.

Appendix 14 – Estimation frequencies and differences for the interobserver agreement.

- **Right side interobserver**

Dif_Right_M_L

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	-72,00	1	,6	,6	,6
	-48,00	1	,6	,6	1,3
	-36,00	4	2,5	2,5	3,8
	-24,00	9	5,5	5,7	9,6
	-12,00	24	14,7	15,3	24,8
	,00	53	32,5	33,8	58,6
	12,00	39	23,9	24,8	83,4
	24,00	11	6,7	7,0	90,4
	36,00	5	3,1	3,2	93,6
	48,00	8	4,9	5,1	98,7
	60,00	2	1,2	1,3	100,0
	Total	157	96,3	100,0	
Omission	System	6	3,7		
Total		163	100,0		

- **Left side interobserver**

Dif_Left_M_L

		Frequency	Percentage	Valid Percentage	Cumulative percentage
Valid	-72,00	1	,6	,6	,6
	-48,00	1	,6	,6	1,3
	-36,00	2	1,2	1,3	2,6
	-24,00	8	4,9	5,1	7,7
	-12,00	27	16,6	17,3	25,0
	,00	53	32,5	34,0	59,0
	12,00	41	25,2	26,3	85,3
	24,00	11	6,7	7,1	92,3
	36,00	2	1,2	1,3	93,6
	48,00	8	4,9	5,1	98,7
	60,00	2	1,2	1,3	100,0

	Total	156	95,7	100,0	
Omission	System	7	4,3		
Total		163	100,0		

Frequency statistics

		Dif_Right_M_L	Dif_Left_M_L
N	Valid	157	156
	Omission	6	7
Mean		4,1274	4,0000
Median		,0000	,0000
Minimum		-72,00	-72,00
Maximum		60,00	60,00

Appendix 15 – Wilcoxon test for estimated *versus* chronological (left and right).

Statistics for Estimated *versus* chronological

		Dif_Right_ Real	Abs_Dif_Right _Real	Dif_Left_ Real	Abs_Dif_Left_ Real	Dif_Right_ Left	Abs_Dif_Right_ Left
	Valid	163	163	163	163	163	163
	Omission	0	0	0	0	0	0
Mean		-11,64	22,07	-11,71	22,31	,07	4,20
Median		-10,00	17,00	-8,00	17,00	,00	,00
Minimum		-123	0	-123	0	-36	0
Maximum		67	123	67	123	24	36

Dif_Right_Left

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	-36	1	,6	,6	,6
	-24	4	2,5	2,5	3,1
	-12	17	10,4	10,4	13,5
	0	115	70,6	70,6	84,0
	12	23	14,1	14,1	98,2
	24	3	1,8	1,8	100,0
	Total	163	100,0	100,0	

Abs_Dif_Right_Left

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	0	115	70,6	70,6	70,6
	12	40	24,5	24,5	95,1
	24	7	4,3	4,3	99,4
	36	1	,6	,6	100,0
	Total	163	100,0	100,0	

Appendix 15 – Wilcoxon test for estimated *versus* chronological (left and right).

Wilcoxon Rank Testing

		N	Middle rank	Sum of ranks
Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	104[a]	88,01	9153,50
	Positive ranks	55[b]	64,85	3566,50
	Ties	4[c]		
	Total	163		
Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	96[d]	91,93	8825,50
	Positive ranks	61[e]	58,65	3577,50
	Ties	6[f]		
	Total	163		
Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	22[g]	26,02	572,50
	Positive ranks	26[h]	23,21	603,50
	Ties	115[i]		
	Total	163		

a. Estimated age London atlas right (months) < Chronological age (months)
b. Estimated age London atlas right (months) > Chronological age (months)
c. Estimated age London atlas right (months) = Chronological age (months)
d. Estimated age London atlas left (months) < Chronological age (months)
e. Estimated age London atlas left (months) > Chronological age (months)
f. Estimated age London atlas left (months) = Chronological age (months)
g. Estimated age London atlas right (months) < Estimated age London atlas left (months)
h. Estimated age London atlas right (months) > Estimated age London atlas left (months)
i. Estimated age London atlas right (months) = Estimated age London atlas left (months)

Test statistics[a]

	Estimated age London atlas right (months) - Chronological age (months)	Estimated age London atlas left (months) - Chronological age (months)	Estimated age London atlas right (months) - Estimated age London atlas left (months)
Z	-4,804[b]	-4,599[b]	-,172[c]
Asymp. Sign. (Bilateral)	,000	,000	,864

a) The Wilcoxon Sign Testing
b) Based on positive ranks.
c) Based on negative ranks.

Appendix 16 – Difference Right chronological *versus* estimated.

Dif_Right_Real

		Frequency	Percentage	Valid Percentage	Cumulative percentage
Valid	-123	1	,6	,6	,6
	-118	1	,6	,6	1,2
	-91	1	,6	,6	1,8
	-77	2	1,2	1,2	3,1
	-71	2	1,2	1,2	4,3
	-66	1	,6	,6	4,9
	-63	3	1,8	1,8	6,7
	-62	1	,6	,6	7,4
	-60	1	,6	,6	8,0
	-54	1	,6	,6	8,6
	-51	1	,6	,6	9,2
	-50	1	,6	,6	9,8
	-48	1	,6	,6	10,4
	-46	1	,6	,6	11,0
	-42	2	1,2	1,2	12,3
	-38	1	,6	,6	12,9
	-34	1	,6	,6	13,5
	-33	1	,6	,6	14,1
	-32	1	,6	,6	14,7
	-31	1	,6	,6	15,3
	-30	2	1,2	1,2	16,6
	-29	1	,6	,6	17,2
	-28	6	3,7	3,7	20,9
	-27	2	1,2	1,2	22,1
	-26	3	1,8	1,8	23,9
	-25	3	1,8	1,8	25,8
	-24	2	1,2	1,2	27,0
	-23	1	,6	,6	27,6
	-22	3	1,8	1,8	29,4
	-21	3	1,8	1,8	31,3
	-20	3	1,8	1,8	33,1
	-19	1	,6	,6	33,7
	-18	3	1,8	1,8	35,6
	-17	4	2,5	2,5	38,0
	-16	2	1,2	1,2	39,3
	-15	4	2,5	2,5	41,7

	-14	2	1,2	1,2	42,9
	-13	4	2,5	2,5	45,4
	-12	3	1,8	1,8	47,2
	-11	3	1,8	1,8	49,1
	-10	3	1,8	1,8	50,9
	-9	1	,6	,6	51,5
	-8	5	3,1	3,1	54,6
	-7	1	,6	,6	55,2
	-6	1	,6	,6	55,8
	-5	4	2,5	2,5	58,3
	-4	2	1,2	1,2	59,5
	-3	3	1,8	1,8	61,3
	-2	2	1,2	1,2	62,6
	-1	2	1,2	1,2	63,8
	0	4	2,5	2,5	66,3
	2	4	2,5	2,5	68,7
	3	4	2,5	2,5	71,2
	4	3	1,8	1,8	73,0
	5	3	1,8	1,8	74,8
	6	3	1,8	1,8	76,7
	7	1	,6	,6	77,3
	8	1	,6	,6	77,9
	9	2	1,2	1,2	79,1
	10	3	1,8	1,8	81,0
	11	1	,6	,6	81,6
	13	4	2,5	2,5	84,0
	14	3	1,8	1,8	85,9
	16	2	1,2	1,2	87,1
	18	1	,6	,6	87,7
	19	1	,6	,6	88,3
	20	1	,6	,6	89,0
	21	3	1,8	1,8	90,8
	22	1	,6	,6	91,4
	24	2	1,2	1,2	92,6
	25	1	,6	,6	93,3
	26	2	1,2	1,2	94,5
	28	1	,6	,6	95,1
	29	3	1,8	1,8	96,9
	32	2	1,2	1,2	98,2
	33	1	,6	,6	98,8

	39	1	,6	,6	99,4
	67	1	,6	,6	100,0
	Total	163	100,0	100,0	

Appendix 17 – Absolute difference Right chronological *versus* estimated.

Abs_Dif_Right_Real

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	0	4	2,5	2,5	2,5
	1	2	1,2	1,2	3,7
	2	6	3,7	3,7	7,4
	3	7	4,3	4,3	11,7
	4	5	3,1	3,1	14,7
	5	7	4,3	4,3	19,0
	6	4	2,5	2,5	21,5
	7	2	1,2	1,2	22,7
	8	6	3,7	3,7	26,4
	9	3	1,8	1,8	28,2
	10	6	3,7	3,7	31,9
	11	4	2,5	2,5	34,4
	12	3	1,8	1,8	36,2
	13	8	4,9	4,9	41,1
	14	5	3,1	3,1	44,2
	15	4	2,5	2,5	46,6
	16	4	2,5	2,5	49,1
	17	4	2,5	2,5	51,5
	18	4	2,5	2,5	54,0
	19	2	1,2	1,2	55,2
	20	4	2,5	2,5	57,7
	21	6	3,7	3,7	61,3
	22	4	2,5	2,5	63,8
	23	1	,6	,6	64,4
	24	4	2,5	2,5	66,9
	25	4	2,5	2,5	69,3
	26	5	3,1	3,1	72,4
	27	2	1,2	1,2	73,6
	28	7	4,3	4,3	77,9
	29	4	2,5	2,5	80,4
	30	2	1,2	1,2	81,6
	31	1	,6	,6	82,2
	32	3	1,8	1,8	84,0
	33	2	1,2	1,2	85,3

	34	1	,6	,6	85,9
	38	1	,6	,6	86,5
	39	1	,6	,6	87,1
	42	2	1,2	1,2	88,3
	46	1	,6	,6	89,0
	48	1	,6	,6	89,6
	50	1	,6	,6	90,2
	51	1	,6	,6	90,8
	54	1	,6	,6	91,4
	60	1	,6	,6	92,0
	62	1	,6	,6	92,6
	63	3	1,8	1,8	94,5
	66	1	,6	,6	95,1
	67	1	,6	,6	95,7
	71	2	1,2	1,2	96,9
	77	2	1,2	1,2	98,2
	91	1	,6	,6	98,8
	118	1	,6	,6	99,4
	123	1	,6	,6	100,0
	Total	163	100,0	100,0	

Appendix 18 - Difference Left chronological *versus* estimated.

Dif_Left_Real

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	-123	1	,6	,6	,6
	-118	1	,6	,6	1,2
	-79	1	,6	,6	1,8
	-77	2	1,2	1,2	3,1
	-75	1	,6	,6	3,7
	-72	1	,6	,6	4,3
	-71	2	1,2	1,2	5,5
	-63	2	1,2	1,2	6,7
	-62	1	,6	,6	7,4
	-60	1	,6	,6	8,0
	-58	1	,6	,6	8,6
	-54	3	1,8	1,8	10,4
	-50	2	1,2	1,2	11,7
	-42	1	,6	,6	12,3
	-39	1	,6	,6	12,9
	-38	2	1,2	1,2	14,1
	-34	4	2,5	2,5	16,6
	-33	1	,6	,6	17,2
	-32	1	,6	,6	17,8
	-31	1	,6	,6	18,4
	-30	1	,6	,6	19,0
	-28	5	3,1	3,1	22,1
	-27	2	1,2	1,2	23,3
	-26	1	,6	,6	23,9
	-25	5	3,1	3,1	27,0
	-24	2	1,2	1,2	28,2
	-23	1	,6	,6	28,8
	-22	1	,6	,6	29,4
	-21	3	1,8	1,8	31,3
	-20	3	1,8	1,8	33,1
	-19	1	,6	,6	33,7
	-18	4	2,5	2,5	36,2
	-17	4	2,5	2,5	38,7
	-16	2	1,2	1,2	39,9

	-15	3	1,8	1,8	41,7
	-14	2	1,2	1,2	42,9
	-13	3	1,8	1,8	44,8
	-12	2	1,2	1,2	46,0
	-11	3	1,8	1,8	47,9
	-10	2	1,2	1,2	49,1
	-9	1	,6	,6	49,7
	-8	3	1,8	1,8	51,5
	-6	2	1,2	1,2	52,8
	-5	4	2,5	2,5	55,2
	-4	1	,6	,6	55,8
	-3	3	1,8	1,8	57,7
	-2	2	1,2	1,2	58,9
	0	6	3,7	3,7	62,6
	1	1	,6	,6	63,2
	2	4	2,5	2,5	65,6
	3	4	2,5	2,5	68,1
	4	5	3,1	3,1	71,2
	5	4	2,5	2,5	73,6
	6	3	1,8	1,8	75,5
	7	2	1,2	1,2	76,7
	8	3	1,8	1,8	78,5
	9	3	1,8	1,8	80,4
	10	2	1,2	1,2	81,6
	11	2	1,2	1,2	82,8
	13	2	1,2	1,2	84,0
	14	3	1,8	1,8	85,9
	16	2	1,2	1,2	87,1
	19	1	,6	,6	87,7
	20	2	1,2	1,2	89,0
	21	3	1,8	1,8	90,8
	22	2	1,2	1,2	92,0
	24	1	,6	,6	92,6
	25	1	,6	,6	93,3
	26	2	1,2	1,2	94,5
	27	1	,6	,6	95,1
	28	1	,6	,6	95,7
	29	3	1,8	1,8	97,5
	32	1	,6	,6	98,2

	33	1	,6	,6	98,8
	37	1	,6	,6	99,4
	67	1	,6	,6	100,0
	Total	163	100,0	100,0	

Appendix 19 - Absolute difference Left Real.

Abs_Dif_Left_Real

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	0	6	3,7	3,7	3,7
	1	1	,6	,6	4,3
	2	6	3,7	3,7	8,0
	3	7	4,3	4,3	12,3
	4	6	3,7	3,7	16,0
	5	8	4,9	4,9	20,9
	6	5	3,1	3,1	23,9
	7	2	1,2	1,2	25,2
	8	6	3,7	3,7	28,8
	9	4	2,5	2,5	31,3
	10	4	2,5	2,5	33,7
	11	5	3,1	3,1	36,8
	12	2	1,2	1,2	38,0
	13	5	3,1	3,1	41,1
	14	5	3,1	3,1	44,2
	15	3	1,8	1,8	46,0
	16	4	2,5	2,5	48,5
	17	4	2,5	2,5	50,9
	18	4	2,5	2,5	53,4
	19	2	1,2	1,2	54,6
	20	5	3,1	3,1	57,7
	21	6	3,7	3,7	61,3
	22	3	1,8	1,8	63,2
	23	1	,6	,6	63,8
	24	3	1,8	1,8	65,6
	25	6	3,7	3,7	69,3
	26	3	1,8	1,8	71,2
	27	3	1,8	1,8	73,0
	28	6	3,7	3,7	76,7
	29	3	1,8	1,8	78,5
	30	1	,6	,6	79,1
	31	1	,6	,6	79,8
	32	2	1,2	1,2	81,0
	33	2	1,2	1,2	82,2

	34	4	2,5	2,5	84,7
	37	1	,6	,6	85,3
	38	2	1,2	1,2	86,5
	39	1	,6	,6	87,1
	42	1	,6	,6	87,7
	50	2	1,2	1,2	89,0
	54	3	1,8	1,8	90,8
	58	1	,6	,6	91,4
	60	1	,6	,6	92,0
	62	1	,6	,6	92,6
	63	2	1,2	1,2	93,9
	67	1	,6	,6	94,5
	71	2	1,2	1,2	95,7
	72	1	,6	,6	96,3
	75	1	,6	,6	96,9
	77	2	1,2	1,2	98,2
	79	1	,6	,6	98,8
	118	1	,6	,6	99,4
	123	1	,6	,6	100,0
	Total	163	100,0	100,0	

Appendix 20 – Institution.

Statistics for institution Right and Left side

Institution		Dif_Right_Real	Abs_Dif_Right_Real	Dif_Left_Real	Abs_Dif_Left_Real	Dif_Right_Left	Abs_Dif_Right_Left
HSM	Valid	51	51	51	51	51	51
	Omission	0	0	0	0	0	0
	Mean	-8,43	17,96	-7,96	18,67	-,47	3,29
	Median	-9,00	15,00	-5,00	15,00	,00	,00
	Minimum	-77	2	-77	2	-36	0
	Maximum	33	77	33	77	24	36
FMDUL	Valid	112	112	112	112	112	112
	Omission	0	0	0	0	0	0
	Mean	-13,10	23,94	-13,42	23,97	,32	4,61
	Median	-11,00	19,50	-10,50	18,50	,00	,00
	Minimum	-123	0	-123	0	-24	0
	Maximum	67	123	67	123	24	24

Test statistics[a]

Institution		Estimated age London atlas right (months) - Chronological age (months)	Estimated age London atlas left (months) - Chronological age (months)	Estimated age London atlas right (months) - Estimated age London atlas left (months)
HSM	Z	-2,335[b]	-1,884[b]	-,284[b]
	Asymp. Sign. (Bilateral)	,020	,060	,776
FMDUL	Z	-4,185[b]	-4,197[b]	-,350[c]
	Asymp. Sign. (Bilateral)	,000	,000	,726

a) The Wilcoxon Sign Testing
b) Based on positive ranks.
c) Based on negative ranks.

Appendix 20 – Institution.

Wilcoxon Rank Testing

Ranks

Institution			N	Middle rank	Sum of ranks
HSM	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	30[a]	30,40	912,00
		Positive ranks	21[b]	19,71	414,00
		Ties	0[c]		
		Total	51		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	29[d]	29,79	864,00
		Positive ranks	22[e]	21,00	462,00
		Ties	0[f]		
		Total	51		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	6[g]	6,00	36,00
		Positive ranks	5[h]	6,00	30,00
		Ties	40[i]		
		Total	51		
FMDUL	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	74[a]	58,22	4308,00
		Positive ranks	34[b]	46,41	1578,00
		Ties	4[c]		
		Total	112		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	67[d]	62,19	4167,00
		Positive ranks	39[e]	38,56	1504,00
		Ties	6[f]		
		Total	112		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	16[g]	20,63	330,00
		Positive ranks	21[h]	17,76	373,00
		Ties	75[i]		
		Total	112		

a. Estimated age London atlas right (months) < Chronological age (months)

b. Estimated age London atlas right (months) > Chronological age (months)

c. Estimated age London atlas right (months) = Chronological age (months)

d. Estimated age London atlas left (months) < Chronological age (months)

e. Estimated age London atlas left (months) > Chronological age (months)

f. Estimated age London atlas left (months) = Chronological age (months)

g. Estimated age London atlas right (months) < Estimated age London atlas left (months)

h. Estimated age London atlas right (months) > Estimated age London atlas left (months)

i. Estimated age London atlas right (months) = Estimated age London atlas left (months)

Appendix 20 – Institution.

Mann-Whitney test

Ranks

	Institution	N	Middle rank	Sum of ranks
Dif_Right_Real	HSM	51	87,66	4470,50
	FMDUL	112	79,42	8895,50
	Total	163		
Dif_Left_Real	HSM	51	88,02	4489,00
	FMDUL	112	79,26	8877,00
	Total	163		
Dif_Right_Left	HSM	51	79,00	4029,00
	FMDUL	112	83,37	9337,00
	Total	163		

Statistics Test [a]

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
U de Mann-Whitney	2567,500	2549,000	2703,000
Wilcoxon W	8895,500	8877,000	4029,000
Z	-1,033	-1,099	-,682
Asymp. Sign. (Bilateral)	,302	,272	,495

a. Group variable: Institution

Appendix 21 – Gender.

Statistics for gender right *versus* left

Gender		Dif_Right_Real	Abs_Dif_Right_Real	Dif_Left_Real	Abs_Dif_Left_Real	Dif_Right_Left	Abs_Dif_Right_Left
Male	Valid	87	87	87	87	87	87
	Omission	0	0	0	0	0	0
	Mean	-15,31	22,44	-15,86	23,01	,55	4,14
	Median	-11,00	16,00	-11,00	16,00	,00	,00
	Minimum	-123	0	-123	0	-24	0
	Maximum	33	123	37	123	24	24
Female	Valid	76	76	76	76	76	76
	Omission	0	0	0	0	0	0
	Mean	-7,43	21,64	-6,96	21,51	-,47	4,26
	Median	-7,50	17,50	-2,50	19,00	,00	,00
	Minimum	-91	0	-79	0	-36	0
	Maximum	67	91	67	79	12	36

Statistics test[a]

Gender		Estimated age London atlas right (months) - Chronological age (months)	Estimated age London atlas left (months) - Chronological age (months)	Estimated age London atlas right (months) - Estimated age London atlas left (months)
Male	Z	-4,614[b]	-4,572[b]	-,573[c]
	Asymp. Sign. (Bilateral)	,000	,000	,567
Female	Z	-2,150[b]	-1,945[b]	-,379[b]
	Asymp. Sign. (Bilateral)	,032	,052	,705

a) The Wilcoxon Sign Testing
b) Based on positive ranks.
c) Based on negative ranks.

Appendix 21 – Gender.

Wilcoxon Rank Testing

Ranks

Gender			N	Middle rank	Sum of ranks
Male	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	60[a]	46,99	2819,50
		Positive ranks	24[b]	31,27	750,50
		Ties	3[c]		
		Total	87		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	57[d]	48,25	2750,00
		Positive ranks	26[e]	28,31	736,00
		Ties	4[f]		
		Total	87		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	10[g]	13,10	131,00
		Positive ranks	14[h]	12,07	169,00
		Ties	63[i]		
		Total	87		
Female	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	44[a]	41,64	1832,00
		Positive ranks	31[b]	32,84	1018,00
		Ties	1[c]		
		Total	76		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	39[d]	44,83	1748,50
		Positive ranks	35[e]	29,33	1026,50
		Ties	2[f]		
		Total	76		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	12[g]	13,50	162,00
		Positive ranks	12[h]	11,50	138,00
		Ties	52[i]		
		Total	76		

a. Estimated age London atlas right (months) < Chronological age (months)
b. Estimated age London atlas right (months) > Chronological age (months)
c. Estimated age London atlas right (months) = Chronological age (months)
d. Estimated age London atlas left (months) < Chronological age (months)
e. Estimated age London atlas left (months) > Chronological age (months)
f. Estimated age London atlas left (months) = Chronological age (months)
g. Estimated age London atlas right (months) < Estimated age London atlas left (months)
h. Estimated age London atlas right (months) > Estimated age London atlas left (months)
i. Estimated age London atlas right (months) = Estimated age London atlas left (months)

Appendix 21 – Gender.

Mann-Whitney Test

Ranks

	Gender	N	Middle rank	Sum of ranks
Dif_Right_Real	Male	87	76,80	6682,00
	Female	76	87,95	6684,00
	Total	163		
Dif_Left_Real	Male	87	75,80	6595,00
	Female	76	89,09	6771,00
	Total	163		
Dif_Right_Left	Male	87	83,60	7273,50
	Female	76	80,16	6092,50
	Total	163		

Statistics test[a]

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
U of Mann-Whitney	2854,000	2767,000	3166,500
Wilcoxon W	6682,000	6595,000	6092,500
Z	-1,504	-1,793	-,578
Asymp. Sign. (Bilateral)	,133	,073	,563

a. Group variable: Gender

Appendix 22 – Differences amongst Age groups

Statistics for different age groups - right and left side

Age groups		Dif_Right_Real	Abs_Dif_Right_Real	Dif_Left_Real	Abs_Dif_Left_Real	Dif_Right_Left	Abs_Dif_Right_Left
Up to 6 years	Valid		7	7	7	7	7
	Omission		0	0	0	0	0
	Mean	4,57	8,00	2,86	6,00	1,71	5,14
	Median	3,00	3,00	3,00	6,00	,00	,00
	Minimum	-8	1	-8	3	-12	0
	Maximum	20	20	11	11	12	12
From 7 to 12	Valid	59	59	59	59	59	59
	Omission		0	0	0	0	0
	Mean	2,02	15,10	2,02	14,97	,00	2,44
	Median	2,00	11,00	3,00	11,00	,00	,00
	Minimum	-51	0	-63	0	-24	0
	Maximum	67	67	67	67	12	24
From 13 to 16	Valid	37	37	37	37	37	37
	Omission		0	0	0	0	0
	Mean	-7,95	16,11	-6,97	16,59	-,97	4,22
	Median	-13,00	15,00	-11,00	16,00	,00	,00
	Minimum	-30	0	-50	0	-24	0
	Maximum	33	33	37	50	24	24
At least 17	Valid	60	60	60	60	60	60
	Omission		0	0	0	0	0
	Mean	-29,23	34,23	-29,83	34,97	,60	5,80
	Median	-24,50	26,50	-26,00	27,50	,00	,00
	Minimum	-123	0	-123	0	-36	0
	Maximum	32	123	32	123	24	36

Appendix 22 – Differences amongst age groups

Wilcoxon Rank Testing

Ranks

Age groups			N	Middle rank	Sum of ranks
Up to 6 years	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	3[a]	3,00	9,00
		Positive ranks	4[b]	4,75	19,00
		Ties	0[c]		
		Total	7		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	2[d]	3,75	7,50
		Positive ranks	5[e]	4,10	20,50
		Ties	0[f]		
		Total	7		
	Estimated age London atlas left (months) - Estimated age London atlas right (months)	Negative ranks	2[g]	2,00	4,00
		Positive ranks	1[h]	2,00	2,00
		Ties	4[i]		
		Total	7		
From 7 to 12	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	25[a]	29,28	732,00
		Positive ranks	32[b]	28,78	921,00
		Ties	2[c]		
		Total	59		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	22[d]	31,77	699,00
		Positive ranks	35[e]	27,26	954,00
		Ties	2[f]		
		Total	59		
	Estimated age London atlas left (months) - Estimated age London atlas right (months)	Negative ranks	6[g]	5,50	33,00
		Positive ranks	5[h]	6,60	33,00
		Ties	48[i]		
		Total	59		
From 13 to 16	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	25[a]	20,32	508,00
		Positive ranks	11[b]	14,36	158,00
		Ties	1[c]		
		Total	37		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	24[d]	19,79	475,00
		Positive ranks	12[e]	15,92	191,00
		Ties	1[f]		
		Total	37		
	Estimated age London atlas left (months) - Estimated age London atlas right (months)	Negative ranks	4[g]	6,38	25,50
		Positive ranks	7[h]	5,79	40,50
		Ties	26[i]		
		Total	37		

At least 17	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	51[a]	31,50	1606,50
		Positive ranks	8[b]	20,44	163,50
		Ties	1[c]		
		Total	60		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	48[d]	31,54	1514,00
		Positive ranks	9[e]	15,44	139,00
		Ties	3[f]		
		Total	60		
	Estimated age London atlas left (months) - Estimated age London atlas right (months)	Negative ranks	14[g]	11,07	155,00
		Positive ranks	9[h]	13,44	121,00
		Ties	37[i]		
		Total	60		

a. Estimated age London atlas right (months) < Chronological age (months)
b. Estimated age London atlas right (months) > Chronological age (months)
c. Estimated age London atlas right (months) = Chronological age (months)
d. Estimated age London atlas left (months) < Chronological age (months)
e. Estimated age London atlas left (months) > Chronological age (months)
f. Estimated age London atlas left (months) = Chronological age (months)
g. Estimated age London atlas left (months) < Estimated age London atlas right (months)
h. Estimated age London atlas left (months) > Estimated age London atlas right (months)
i. Estimated age London atlas left (months) = Estimated age London atlas right (months)

Statistics test[a]

Age groups		Estimated age London atlas right (months) - Chronological age (months)	Estimated age London atlas left (months) - Chronological age (months)	Estimated age London atlas left (months) - Estimated age London atlas right (months)
Up to 6 years	Z	-,851[b]	-1,109[b]	-,577[c]
	Asymp. Sign. (Bilateral)	,395	,268	,564
From 7 to 12	Z	-,751[b]	-1,013[b]	,000[d]
	Asymp. Sign. (Bilateral)	,453	,311	1,000
From 13 to 16	Z	-2,750[c]	-2,232[c]	-,711[b]
	Asymp. Sign. (Bilateral)	,006	,026	,477
At least 17	Z	-5,447[c]	-5,463[c]	-,549[c]
	Asymp. Sign. (Bilateral)	,000	,000	,583

a) The Wilcoxon Sign Testing
b) Based on positive ranks.
c) Based on negative ranks.
d) The sum of negative positions is equal to the sum of positive positions.

Appendix 23 – Differences amongst Age groups – 16-year threshold.

Statistics for differences between under and at least 16 years of age

Real age greater than or equal to 16 years		Dif_Right_Real	Abs_Dif_Right_Real	Dif_Left_Real	Abs_Dif_Left_Real	Dif_Right_Left	Abs_Dif_Right_Left
Under 16 years	Valid	93	93	93	93	93	93
	Omission	0	0		0	0	0
	Mean	-,75	14,80	-,37	14,11	-,39	2,97
	Median	-1,00	13,00	2,00	11,00	,00	,00
	Minimum	-51	0	-63	0	-24	0
	Maximum	67	67	67	67	12	24
At least 16 years	Valid	70	70	70	70	70	70
	Omission	0	0		0	0	0
	Mean	-26,10	31,73	-26,79	33,21	,69	5,83
	Median	-22,00	24,50	-24,50	27,50	,00	,00
	Minimum	-123	0	-123	0	-36	0
	Maximum	32	123	37	123	24	36

Statistics test[a]

Real age greater than or equal to 16 years		Estimated age London atlas right (months) - Chronological age (months)	Estimated age London atlas left (months) - Chronological age (months)	Estimated age London atlas right (months) - Estimated age London atlas left (months)
Under 16 years	Z	-,625[b]	-,178[b]	-,600[b]
	Asymp. Sign. (Bilateral)	,532	,859	,549
At least 16 years	Z	-5,555[b]	-5,478[b]	-,587[c]
	Asymp. Sign. (Bilateral)	,000	,000	,557

a) The Wilcoxon Sign Testing
b) Based on positive ranks.
c) Based on negative ranks.

Appendix 23 – Differences amongst Age groups – 16-year threshold.

Ranks

Real age greater than or equal to 16 years			N	Middle rank	Sum of ranks
Under 16 years	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	47[a]	47,89	2251,00
		Positive ranks	44[b]	43,98	1935,00
		Ties	2[c]		
		Total	93		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	42[d]	50,90	2138,00
		Positive ranks	49[e]	41,80	2048,00
		Ties	2[f]		
		Total	93		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	12[g]	11,92	143,00
		Positive ranks	10[h]	11,00	110,00
		Ties	71[i]		
		Total	93		
At least 16 years	Estimated age London atlas right (months) - Chronological age (months)	Negative ranks	57[a]	36,53	2082,00
		Positive ranks	11[b]	24,00	264,00
		Ties	2[c]		
		Total	70		
	Estimated age London atlas left (months) - Chronological age (months)	Negative ranks	54[d]	36,35	1963,00
		Positive ranks	12[e]	20,67	248,00
		Ties	4[f]		
		Total	70		
	Estimated age London atlas right (months) - Estimated age London atlas left (months)	Negative ranks	10[g]	15,35	153,50
		Positive ranks	16[h]	12,34	197,50
		Ties	44[i]		
		Total	70		

a. Estimated age London atlas right (months) < Chronological age (months)
b. Estimated age London atlas right (months) > Chronological age (months)
c. Estimated age London atlas right (months) = Chronological age (months)
d. Estimated age London atlas left (months) < Chronological age (months)
e. Estimated age London atlas left (months) > Chronological age (months)
f. Estimated age London atlas left (months) = Chronological age (months)
g. Estimated age London atlas right (months) < Estimated age London atlas left (months)
h. Estimated age London atlas right (months) > Estimated age London atlas left (months)
i. Estimated age London atlas right (months) = Estimated age London atlas left (months)

Appendix 23 – Differences amongst Age groups – 16-year threshold

Mann-Whitney Test

Ranks

	Real age greater than or equal to 16 years	N	Middle rank	Sum of ranks
Dif_Right_Real	Under 16 years	93	99,85	9286,50
	At least 16 years	70	58,28	4079,50
	Total	163		
Dif_Left_Real	Under 16 years	93	100,40	9337,00
	At least 16 years	70	57,56	4029,00
	Total	163		
Dif_Right_Left	Under 16 years	93	78,79	7327,50
	At least 16 years	70	86,26	6038,50
	Total	163		

Statistics test[a]

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
U of Mann-Whitney	1594,500	1544,000	2956,500
Wilcoxon W	4079,500	4029,000	7327,500
Z	-5,568	-5,737	-1,246
Asymp. Sign. (Bilateral)	,000	,000	,213

a. Group variable: Real age greater than or equal to 16 years

Real age greater than or equal to 16 years

		Under 16 years		At least 16 years	
		Score	% of N in the column	Score	% of N in the column
Age estimate (right)	Estimate less than 16 years	90	96,8%	17	24,3%
	Estimate with at least 16 years	3	3,2%	53	75,7%
Age estimate (left)	Estimate less than 16 years	90	96,8%	18	25,7%
	Estimate with at least 16 years	3	3,2%	52	74,3%

Appendix 24 – Age Estimation in SD and NSD (with and without dental repercussions)

Diagnosed systemic diseases		Dif_Right_Real	Abs_Dif_Right_Real	Dif_Left_Real	Abs_Dif_Left_Real	Dif_Right_Left	Abs_Dif_Right_Left
Downs Syndrome	Valid	23	23	23	23	23	23
	Omission	0	0	0	0	0	0
	Mean	-22,48	32,04	-20,91	29,61	-1,57	7,83
	Median	-19,00	22,00	-16,00	20,00	,00	12,00
	Minimum	-77	1	-77	2	-36	0
	Maximum	29	77	29	77	12	36
Chromosomic alterations	Valid	11	11	11	11	11	11
	Omission	0	0	0	0	0	0
	Mean	-19,27	24,00	-16,00	24,73	-3,27	9,82
	Median	-20,00	26,00	-4,00	20,00	,00	12,00
	Minimum	-60	0	-72	0	-24	0
	Maximum	26	60	26	72	12	24
Syndromes	Valid	23	23	23	23	23	23
	Omission	0	0	0	0	0	0
	Mean	-10,17	14,87	-12,26	17,91	2,09	3,13
	Median	-11,00	11,00	-11,00	15,00	,00	,00
	Minimum	-51	1	-63	2	-12	0
	Maximum	24	51	24	63	24	24
Central nervous system	Valid	38	38	38	38	38	38
	Omission	0	0	0	0	0	0
	Mean	-13,13	20,24	-12,50	21,29	-,63	3,16
	Median	-8,00	14,00	-5,00	14,00	,00	,00
	Minimum	-91	0	-79	0	-24	0
	Maximum	32	91	37	79	12	24
Others	Valid	49	49	49	49	49	49
	Omission	0	0	0	0	0	0
	Mean	-6,22	21,69	-7,45	21,24	1,22	3,18
	Median	-5,00	17,00	-5,00	17,00	,00	,00
	Minimum	-123	3	-123	0	-12	0
	Maximum	67	123	67	123	24	24
Pathologies with no dental symptoms	Valid	19	19	19	19	19	19
	Omission	0	0	0	0	0	0
	Mean	-6,84	22,21	-6,84	22,21	,00	2,53
	Median	3,00	23,00	3,00	22,00	,00	,00

	Minimum	-48	3	-60	3	-12	0
	Maximum	39	48	27	60	12	12

Statistics test[a,b]

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
Chi-square	6,561	3,797	2,367
gl	5	5	5
Asymp. Sign.	,255	,579	,796

a. Kruskal Wallis test
b. Group variable: Diagnosed systemic diseases

Kruskal-Wallis test

Ranks

	Diagnosed systemic diseases	N	Middle rank
Dif_Right_Real	Downs Syndrome	23	67,72
	Chromosomic alterations	11	62,77
	Syndromes	23	82,76
	Central nervous system	38	79,99
	Others	49	92,34
	Pathologies with no dental symptoms	19	86,87
	Total	163	
Dif_Left_Real	Downs Syndrome	23	69,76
	Chromosomic alterations	11	76,82
	Syndromes	23	77,96
	Central nervous system	38	79,47
	Others	49	89,91
	Pathologies with no dental symptoms	19	89,37
	Total	163	
Dif_Right_Left	Downs Syndrome	23	79,76
	Chromosomic alterations	11	72,91
	Syndromes	23	89,70
	Central nervous system	38	78,30
	Others	49	85,00
	Pathologies with no dental symptoms	19	80,32
	Total	163	

Appendix 25 – With and without dental repercussions

Case processing summary

		Cases					
		Valid		Omisson		Total	
	Dental Repercussions	N	Percentage	N	Percentage	N	Percentage
Dif_Right_Real	With dental repercussions	95	100,0%	0	0,0%	95	100,0%
	With no dental repercussions	68	100,0%	0	0,0%	68	100,0%
Dif_Left_Real	With dental repercussions	95	100,0%	0	0,0%	95	100,0%
	With no dental repercussions	68	100,0%	0	0,0%	68	100,0%
Dif_Right_Left	With dental repercussions	95	100,0%	0	0,0%	95	100,0%
	With no dental repercussions	68	100,0%	0	0,0%	68	100,0%

Descriptive

	Dental Repercussions		Statistics
Dif_Right_Real	With dental repercussions	Mean	-15,39
		Median	-12,00
		Minimum	-91
		Maximum	32
	With no dental repercussions	Mean	-6,40
		Median	-5,00
		Minimum	-123
		Maximum	67
Dif_Left_Real	With dental repercussions	Mean	-14,88
		Median	-11,00
		Minimum	-79
		Maximum	37
	With no dental repercussions	Mean	-7,28
		Median	-4,00
		Minimum	-123
		Maximum	67
Dif_Right_Left	With dental repercussions	Mean	-,51
		Median	,00
		Minimum	-36
		Maximum	24
	With no dental repercussions	Mean	,88
		Median	,00
		Minimum	-12
		Maximum	24

Mann/Whitney test

Ranks

	Dental Repercussions	N	Medium rank	Sum of ranks
Dif_Right_Real	With dental repercussions	95	75,69	7191,00
	With no dental repercussions	68	90,81	6175,00
	Total	163		
Dif_Left_Real	With dental repercussions	95	76,45	7262,50
	With no dental repercussions	68	89,76	6103,50
	Total	163		
Dif_Right_Left	With dental repercussions	95	80,79	7675,00
	With no dental repercussions	68	83,69	5691,00
	Total	163		

Test statistics[a]

	Dif_Right_Real	Dif_Left_Real	Dif_Right_Left
U de Mann-Whitney	2631,000	2702,500	3115,000
Wilcoxon W	7191,000	7262,500	7675,000
Z	-2,016	-1,776	-,482
Significância Assint. (Bilateral)	,044	,076	,630

a. Group variable: Dental Repercussions